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de Vitry, C., Olive, J., Drapier, D., Recouvreur, M., and Wollman, F.-A. Posttranslational events leading to the assembly of photosystem II protein complex: a study using photosynthesis mutants from *Chlamydomonas reinhardtii*. 991.
Devore, J. J., Conrad, G. W., and Rappaport, R. A model for astral stimulation of cytokinesis in animal cells. 2225.
de Wildt, P. *See* Kooijman, de Wildt, Beumer, van der Vliet, Homan, Kalshoven, Musgrave, and van den Ende.
Dharmawardhane, S. *See* Hall, Warren, Dharmawardhane, and Condeelis.
Dickson, G. *See* Doherty, Barton, Dickson, Seaton, Rowett, Moore, Gower, and Walsh.
— *See* Pizzey, Rowett, Barton, Dickson, and Walsh.
Dickson, I. R. *See* Kwan, Dickson, Freemont, and Grant.
Di Gioia, G. *See* Navone, Di Gioia, Jahn, Browning, Greengard, and De Camilli.
Dimond, R. L. *See* Ebert, Freeze, Richardson, Dimond, and Cardelli.
Disney, J. E., Johnson, K. R., Magnuson, N. S., Sylvester, S. R., and Reeves, R. High-mobility group protein HMG-I localizes to G/Q- and C-bands of human and mouse chromosomes. 1975.
Dixit, V. M. *See* Prochownik, O'Rourke, and Dixit.
Dobberstein, B. *See* Lipp, Flint, Haeuptle, and Dobberstein.
Doherty, J.-J. II *See* Lai, Cameron, Doherty, Posner, and Bergeron.
— *See* Lai, Cameron, Wada, Doherty, Kay, Posner, and Bergeron.
Doherty, P., Barton, C. H., Dickson, G., Seaton, P., Rowett, L. H., Moore, S. E., Gower, H. J., and Walsh, F. S. Neuronal process outgrowth of human sensory neurons on monolayers of cells transfected with cDNAs for five human N-CAM isoforms. 789.
Doms, R. W., Russ, G., and Yewdell, J. W. Brefeldin A redistributes resident and itinerant Golgi proteins to the endoplasmic reticulum. 61.
Dorée, M. *See* Picard, Capony, Brautigan, and Dorée.
Dotti, C. *See* Bacallao, Antony, Dotti, Karsenti, Stelzer, and Simons.
Dotto, G. P., Moellmann, G., Ghosh, S., Edwards, M., and Halaban, R. Transformation of murine melanocytes by basic fibroblast growth factor cDNA and oncogenes and selective suppression of the transformed phenotype in a reconstituted cutaneous environment. 3115.
Drake, T. A., Ruf, W., Morrissey, J. H., and Edgington, T. S. Functional tissue factor is entirely cell surface expressed on lipopolysaccharide-stimulated human blood monocytes and a constitutively tissue factor–producing neoplastic cell line. 389.
Drapier, D. *See* de Vitry, Olive, Drapier, Recouvreur, and Wollman.
Drenckhahn, D. *See* Achler, Filmer, Merte, and Drenckhahn.
— *See* Tilney, Tilney, Stephens, Merte, Drenckhahn, Cotanche, and Bretscher.
Dreyfuss, G. *See* Piñol-Roma, Swanson, Gall, and Dreyfuss.
Drickamer, K. *See* Graeve, Drickamer, and Rodriguez-Boulan.
Driscoll, M., Dean, E., Reilly, E., Bergholz, E., and Chalfie, M. Genetic and molecular analysis of a *Caenorhabditis elegans* β-tubulin that conveys benzimidazole sensitivity. 2993.
Dubinsky, J. M., Loftus, D. J., Fischbach, G. D., and Elson, E. L. Formation of acetylcholine receptor clusters in chick myotubes: migration or new insertion? 1733.
Dublet, B. *See* Sugrue, Gordon, Seyer, Dublet, van der Rest, and Olsen.
— *See* Sugrue, Gordon, Seyer, Dublet, van der Rest, and Olsen.
Dubois-Dalcq, M. *See* Godfraind, Friedrich, Holmes, and Dubois-Dalcq.
— *See* Hudson, Friedrich, Behar, Dubois-Dalcq, and Lazzarini.
Dubreuil, R. R., Byers, T. J., Sillman, A. L., Bar-Zvi, D., Goldstein, L. S. B., and Branton, D. The complete sequence of *Drosophila* alpha-spectrin: conservation of structural domains between alpha-spectrins and alpha-actinin. 2197.
— *See* Byers, Husain-Chishti, Dubreuil, Branton, and Goldstein.
Duncan, R. F., and Hershey, J. W. B. Protein synthesis and protein phosphorylation during heat stress, recovery, and adaptation. 1467.
Dunn, K. W., McGraw, T. E., and Maxfield, F. R. Iterative fractionation of recycling receptors from lysosomally destined ligands in an early sorting endosome. 3303.
Dvorak, H. F. *See* ffrench-Constant, Van De Water L., Dvorak, and Hynes.

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Ebert, D. L., Freeze, H. H., Richardson, J., Dimond, R. L., and Cardelli, J. A. A *Dictyostelium discoideum* mutant that missorts and oversecretes lysosomal enzyme precursors is defective in endocytosis. 1445.
Edgington, T. S. *See* Drake, Ruf, Morrissey, and Edgington.
Edidin, M. *See* Madreperla, Edidin, and Adler.
— *See* Wade, Freed, and Edidin.
Edwards, M. *See* Dotto, Moellmann, Ghosh, Edwards, and Halaban.
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Eidelman, O. *See* Sarkar, Morris, Eidelman, Zimmerberg, and Blumenthal.
Einstein, R., and Gabel, C. A. Serum factors alter the extent of dephosphorylation of ligands endocytosed via the mannose 6-phosphate/insulin-like growth factor II receptor. 1037.
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— *See* Muir, Engvall, Varon, and Manthorpe.
Erickson, H. P. *See* Lotz, Burdsal, Erickson, and McClay.
Erikson, R. L. *See* Martin-Perez, Bar-Zvi, Branton, and Erikson.
Ertl, H., Mengele, R., Wenzl, S., Engel, J., and Sumper, M. The extracellular matrix of *Volvox carteri*: molecular structure of the cellular compartment. 3493.
Eskue, W. A. *See* Snell, Eskue, and Buchanan.
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Fandrich, R. R. *See* Kardami and Fandrich.
Farach-Carson, M. C., Carson, D. D., Collier, J. L., Lennarz, W. J., Park, H. R., and Wright, G. C. A calcium-binding, asparagine-linked oligosaccharide is involved in skeleton formation in the sea urchin embryo. 1289.
Farber, C. *See* Nathan, Srimal, Farber, Sanchez, Kabbash, Asch, Gailit, and Wright.
Farris, J. *See* Feige, Bradley, Fryburg, Farris, Cousens, Barr, and Baird.
Federici, A. B. *See* Dejana, Lampugnani, Giorgi, Gaboli, Federici, Ruggeri, and Marchisio.
Fehon, R. G. *See* Johansen, Fehon, and Artavanis-Tsakonas.
Feige, A. J.-J., Bradley, J. D., Fryburg, K., Farris, J., Cousens, L. D., Barr, P. J., and Baird, A. Differential effects of heparin, fibronectin, and laminin on the phosphorylation of basic fibroblast growth factor by protein kinase C and the catalytic subunit of protein kinase A. 3105.
Feinberg, J. *See* Pariset, Feinberg, Dacheux, Øyen, Jahnsen, and Weinman.
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Fernández, E. *See* Kindle, Schnell, Fernández, and Lefebvre.
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— *See* Pfeffer, Ferrari, Tosetti, and Vidali.
Ferro-Novick, S. *See* Bacon, Salminen, Ruohola, Novick, and Ferro-Novick.
ffrench-Constant, C., Van De Water L., Dvorak, H. F., and Hynes, R. O. Reappearance of an embryonic pattern of fibronectin splicing during wound healing in the adult rat. 903.
Field, C. M. *See* Kellogg, Field, and Alberts.
— *See* Miller, Field, and Alberts.
Filmer, D. *See* Achler, Filmer, Merte, and Drenckhahn.
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— *See* Dubinsky, Loftus, Fischbach, and Elson.

Fisher, S. J., Cui, T.-y., Zhang, L., Hartman, L., Grahl, K., Guo-Yang, Z., Tarpey, J., and Damsky, C. H. Adhesive and degradative properties of human placental cytotrophoblast cells in vitro. 891.
Fisher, S. K. *See* Vaughan, Fisher, Bernstein, Hale, Linberg, and Matsumoto.
Fishkind, D. J. *See* Henson, Begg, Beaulieu, Fishkind, Bonder, Terasaki, Lebeche, and Kaminer.
Flicker, P. F. *See* Pasternak, Flicker, Ravid, and Spudich.
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Flynn, G. *See* Joly, Flynn, and Purich.
Földvári, M. *See* LeBlanc, Földvári, Spencer, Breckenridge, Fenwick, Williams, and Mezei.
Folkman, J. *See* Ingber and Folkman.
Frado, L.-L. Y., and Craig, R. Structural changes induced in Ca^{2+}-regulated myosin filaments by Ca^{2+} and ATP. 529.
Franke, W. W. *See* Boyer, Tucker, Vallés, Franke, and Thiery.
— *See* Rungger-Brändle, Achtstätter, and Franke.
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Frid, M. G. *See* Glukhova, Frid, Shekhonin, Vasilevskaya, Grunwald, Saginati, and Koteliansky.
Friedman, N. *See* Chaney, Sundaram, Friedman, and Stanley.
Friedrich, V. L., Jr. *See* Hudson, Friedrich, Behar, Dubois-Dalcq, and Lazzarini.
Friedrich, V. L. *See* Godfraind, Friedrich, Holmes, and Dubois-Dalcq.
Frösch, D. *See* Kaufmann, Frösch, Westphal, Weber, and Klein.
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— *See* Kopan and Fuchs.
Fuchs, J.-P. *See* Mähl, Lutz, Puvion, and Fuchs.
Fuks, Z. *See* Rogelj, Klagsbrun, Atzmon, Kurokawa, Haimovitz, Fuks, and Vlodavsky.
Fuller, S. D. *See* Tooze, Kern, Fuller, and Howell.
Fulton, A. B. *See* Isaacs, Kim, Struve, and Fulton.
Funk, S. E. *See* Sage, Vernon, Funk, Everitt, and Angello.
Fürst, D. O., Osborn, M., and Weber, K. Myogenesis in the mouse embryo: differential onset of expression of myogenic proteins and the involvement of titin in myofibril assembly. 517.
— *See* Nave, Fürst, and Weber.

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Gailit, J. *See* Nathan, Srimal, Farber, Sanchez, Kabbash, Asch, Gailit, and Wright.
Gall, J. G. *See* Piñol-Roma, Swanson, Gall, and Dreyfuss.
Ganz, T. *See* Joiner, Ganz, Albert, and Rotrosen.
Garcia, A., Coudrier, E., Carboni, J., Anderson, J., Vandekerkhove, J., Mooseker, M., Louvard, D., and Arpin, M. Partial deduced sequence of the 110-kD–calmodulin complex of the avian intestial microvillus shows that this mechanoenzyme is a member of the myosin I family. 2895.
Garcia, J. V., Gehm, B. D., and Rosner, M. R. An evolutionarily conserved enzyme degrades transforming growth factor-alpha as well as insulin. 1301.
Garcia-Pardo, A. *See* Wayner, Garcia-Pardo, Humphries, McDonald, and Carter.
Geha, R. S. *See* Chatila, Geha, and Arnaout.
Gehlsen, K. R. *See* Languino, Gehlsen, Wayner, Carter, Engvall, and Ruoslahti.
Gehm, B. D. *See* Garcia, Gehm, and Rosner.
Gennarini, G., Cibelli, G., Rougon, G., Mattei, M.-G., and Goridis, C. The mouse neuronal cell surface protein F3: a phosphatidylinositol-anchored member of the immunoglobulin superfamily related to chicken contactin. 775.
Geoffroy, J. S., and Rosen, S. D. Demonstration that a lectin-like receptor ($GP90^{MEL}$) directly mediates adhesion of lymphocytes to high endothelial venules of lymph nodes. 2463.
Gewalt, S. L. *See* Harris and Gewalt.
Ghosh, S. *See* Dotto, Moellmann, Ghosh, Edwards, and Halaban.
Gilbert, S. P., and Sloboda, R. D. A squid dynein isoform promotes axoplasmic vesicle translocation. 2379.
Giorgi, M. *See* Dejana, Lampugnani, Giorgi, Gaboli, Federici, Ruggeri, and Marchisio.
Gipson, I. K. *See* Zieske, Bukusoglu, and Gipson.
Glover, D. M. *See* Karess and Glover.
Glukhova, M. A., Frid, M. G., Shekhonin, B. V., Vasilevskaya, T. D., Grunwald, J., Saginati, M., and Koteliansky, V. E. Expression of extra domain A fibronectin sequence in vascular smooth muscle cells is phenotype dependent. 357.
Godfraind, C., Friedrich, V. L., Holmes, S. B., and Dubois-Dalcq, M. In vivo analysis of glial cell phenotypes during a viral demyelinating disease in mice. 2405.
Goldberg, M., Belkowski, L. S., and Bloom, B. R. Regulation of macrophage growth and antiviral activity by interferon-γ. 1331.
Goldfarb, D. S. *See* Akey and Goldfarb.
— *See* White, Allis, Goldfarb, Srivastva, Weir, and Gorovsky.
Goldstein, L. S. B. *See* Byers, Husain-Chishti, Dubreuil, Branton, and Goldstein.
— *See* Dubreuil, Byers, Sillman, Bar-Zvi, Goldstein, and Branton.
Gooch, J. *See* Way, Gooch, Pope, and Weeds.
Goodenough, U. W. Cyclic AMP enhances the sexual agglutinability of *Chlamydomonas* flagella. 247.
Goodman, C. S. *See* Montell and Goodman.
Goodman, S. L., Risse, G., and von der Mark, K. The E8 subfragment of laminin promotes locomotion of myoblasts over extracellular matrix. 799.
Gorbsky, G. J., and Borisy, G. G. Microtubules of the kinetochore fiber turn over in metaphase but not in anaphase. 653.
Gordon, J. I. *See* Trahair, Neutra, and Gordon.
Gordon, M. K. *See* Sugrue, Gordon, Seyer, Dublet, van der Rest, and Olsen.
— *See* Sugrue, Gordon, Seyer, Dublet, van der Rest, and Olsen.
Goridis, C. *See* Gennarini, Cibelli, Rougon, Mattei, and Goridis.
Gorovsky, M. A. *See* White, Allis, Goldfarb, Srivastva, Weir, and Gorovsky.
Goslin, K., Birgbauer, E., Banker, G., and Solomon, F. The role of cytoskeleton in organizing growth cones: a microfilament-associated growth cone component depends upon microtubules for its localization. 1621.
Gower, H. J. *See* Doherty, Barton, Dickson, Seaton, Rowett, Moore, Gower, and Walsh.
Graeve, L., Drickamer, K., and Rodriguez-Boulan, E. Polarized endocytosis by Madin–Darby canine kidney cells transfected with functional chicken liver glycoprotein receptor. 2809.
Grahl, K. *See* Fisher, Cui, Zhang, Hartman, Grahl, Guo-Yang, Tarpey, and Damsky.
Grainger, J. L., and Winkler, M. M. The sea urchin multicatalytic protease: purification, biochemical analysis, subcellular distribution, and relationship to snRNPs. 675.
Grant, *See* Kwan, Dickson, Freemont, and Grant.
Greene, L. A. *See* Volonté, Rukenstein, Loeb, and Greene.
Greengard, P. *See* Navone, Di Gioia, Jahn, Browning, Greengard, and De Camilli.
Grelling, K. A. *See* Klatte, Kurpakus, Grelling, and Jones.
Griffin, G. L. *See* Pierce, Mustoe, Lingelbach, Masakowski, Griffin, Senior, and Deuel.
Griffiths, G., Back, R., and Marsh, M. A quantitative analysis of the endocytic pathway in baby hamster kidney cells. 2703.
— *See* Parton, Prydz, Bomsel, Simons, and Griffiths.
Gruenberg, J. *See* Bomsel, Prydz, Parton, Gruenberg, and Simons.
Grunwald, J. *See* Glukhova, Frid, Shekhonin, Vasilevskaya, Grunwald, Saginati, and Koteliansky.
Gu, Y., Ralston, E., Murphy-Erdosh, C., Black, R. A., and Hall, Z. W. Acetylcholine receptor in a C2 muscle cell variant is retained in the endoplasmic reticulum. 729.
Guan, J.-L. *See* Solowska, Guan, Marcantonio, Trevithick, Buck, and Hynes.
— *See* Solowska, Guan, Marcantonio, Trevithick, Buck, and Hynes.
Guiard, B. *See* Rassow, Guiard, Wienhues, Herzog, Hartl, and Neupert.

Gundersen, G. G., Khawaja, S., and Bulinski, J. C. Generation of a stable, posttranslationally modified microtubule array is an early event in myogenic differentiation. 2275.
Guo-Yang, Z. *See* Fisher, Cui, Zhang, Hartman, Grahl, Guo-Yang, Tarpey, and Damsky.
Gustafson, E. J., Lukasiewicz, H., Wachtfogel, Y. T., Norton, K. J., Schmaier, A. H., Niewiarowski, S., and Colman, R. W. High molecular weight kininogen inhibits fibrinogen binding to cytoadhesins of neutrophils and platelets. 377.
Gustavsson, J. *See* Särndahl, Lindroth, Bengtsson, Fällman, Gustavsson, Stendahl, and Andersson.
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Haeuptle, M.-T. *See* Lipp, Flint, Haeuptle, and Dobberstein.
Hagstedt, T., Lichtenberg, B., Wille, H., Mandelkow, E.-M., and Mandelkow, E. Tau protein becomes long and stiff upon phosphorylation: correlation between parcrystalline structure and degree of phosphorylation. 1643.
Haimovitz, A. *See* Rogelj, Klagsbrun, Atzmon, Kurokawa, Haimovitz, Fuks, and Vlodavsky.
Halaban, R. *See* Dotto, Moellmann, Ghosh, Edwards, and Halaban.
Hale, I. L. *See* Vaughan, Fisher, Bernstein, Hale, Linberg, and Matsumoto.
Hall, A. L., Warren, V., Dharmawardhane, S., and Condeelis, J. Identification of actin nucleation activity and polymerization inhibitor in ameboid cells: their regulation by chemotactic stimulation. 2207.
— *See* Wessels, Schroeder, Voss, Hall, Condeelis, and Soll.
Hall, Z. W. *See* Gu, Ralston, Murphy-Erdosh, Black, and Hall.
— *See* Ralston and Hall.
Hann, B. C., Poritz, M. A., and Walter, P. *Saccharomyces cerevisiae* and *Schizosaccharomyces pombe* contain a homologue to the 54-kD subunit of the signal recognition particle that in *S. cerevisiae* is essential for growth. 3223.
Harris, A. K., and Gewalt, S. L. Simulation testng of mechanisms form inducing the formation of the contractile ring in cytokinesis. 2215.
Harris, J. M. *See* Breitfeld, Harris, and Mostov.
Hart, I. K., Richardson, W. D., Bolsover, S. R., and Raff, M. C. PDGF and intracellular signaling in the timing of oligodendrocyte differentiation. 3411.
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Hartman, L. *See* Fisher, Cui, Zhang, Hartman, Grahl, Guo-Yang, Tarpey, and Damsky.
Hartwig, J. H., Chambers, K. A., Hopcia, K. L., and Kwiatkowski, D. J. Association of profilin with filament-free regions of human leukocyte and platelet membranes and reversible membrane binding during platelet activation. 1571.
Hauri, H.-P. *See* Marxer, Stieger, Quaroni, Kashgarian, and Hauri.
Heath, J. P. *See* Capetanaki, Smith, and Heath.
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Hegmann, T. E., Lin, J. L.-C., and Lin, J. J.-C. Probing the role of nonmuscle tropomyosin isoforms in intracellular granule movement by microinjection of monoclonal antibodies. 1141.
Heidmann, S. R. *See* Dennerll, Lamoureux, Buxbaum, and Heidmann.
Hein, A. *See* Peattie, Alonso, Hein, and Caulfield.
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Helfrich, M. *See* Davies, Warwick, Totty, Philp, Helfrich, and Horton.
Hemler, M. E. *See* Takada and Hemler.
Henry, L. *See* Trybus and Henry.
Henson, J. H., Begg, D. A., Beaulieu, S. M., Fishkind, D. J., Bonder, E. M., Terasaki, M., Lebeche, D., and Kaminer, B. A calsequestrin-like protein in the endoplasmic reticulum of the sea urchin: localization and dynamics in the egg and first cell cycle embryo. 149.
Hepler, P. K. Calcium transients during mitosis: observations in flux. 2567.
Heremans, A., Van Der Schueren, B., De Cock, B., Paulsson, M., Cassiman, J.-J., Van Den Berghe, H., and David, G. Matrix-associated heparan sulfate proteoglycan: core protein–specific monoclonal antibodies decorate the pericellular matrix of connective tissue cells and the stromal side of basement membranes. 3199.
Herman, I. M. *See* DeNofrio, Hoock, and Herman.
Hershey, J. W. B. *See* Duncan and Hershey.
Herzog, V. *See* Rassow, Guiard, Wienhues, Herzog, Hartl, and Neupert.
Heuser, J., and Steer, C. J. Trimeric binding of the 70-kD uncoating ATPase to the vertices of clathrin triskelia: a candidate intermediate in the vesicle uncoating reaction. 1457.
Heuser, J. E. *See* Mooseker, Conzelman, Coleman, Heuser, and Sheetz.
Hickey, E. *See* Landry, Chrétien, Lambert, Hickey, and Weber.
Hieda, Y., Tsukita, S., and Tsukita, S. A new high molecular mass protein showing unique localization in desmosomal plaque. 1511.
Higgins, G. A. *See* Oyler, Higgins, Hart, Battenberg, Billingsley, Bloom, and Wilson.
Hinshaw, J. E., and Miller, K. R. Localization of light-harvesting complex II to the occluded surfaces of photosynthetic membranes. 1725.
Hirohashi, S. *See* Shimoyama, Yoshida, Terada, Shimosato, Abe, and Hirohashi.
Hirokawa, N. *See* Kanai, Takemura, Oshima, Mori, Ihara, Yanagisawa, Masaki, and Hirokawa.
— *See* Okabe and Hirokawa.
Hirvonen, H. *See* Sandberg, Tammimen, Hirvonen, Vuorio, and Pihlajaniemi.
Hogan-Sheldon, J. *See* Saide, Chin-Bow, Hogan-Sheldon, Busquets-Turner, Vigoreaux, Valgeirsdottir, and Pardue.
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Hörler, I. *See* Bruckner, Hörler, Mendler, Houze, Winterhalter, Eich-Bender, and Spycher.
Horowits, R., Maruyama, K., and Podolsky, R. J. Elastic behavior of connectin filaments during thick filament movement in activated skeletal muscle. 2169.
Horton, M. *See* Davies, Warwick, Totty, Philp, Helfrich, and Horton.
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Howell, K. E. *See* Tooze, Kern, Fuller, and Howell.
Huarte, J. *See* Sappino, Huarte, Belin, and Vassalli.
Hudson, L. D., Friedrich, V. L., Jr., Behar, T., Dubois-Dalcq, M., and Lazzarini, R. A. The initial events in myelin synthesis: orientation of proteolipid protein in the plasma membrane of cultured oligodendrocytes. 717.
Hull, J. D. *See* Parks, Hull, and Lamb.
Humphries, M. J. *See* Wayner, Garcia-Pardo, Humphries, McDonald, and Carter.
Hunter, T. *See* Defize, Boonstra, Meisenhelder, Kruijer, Tertoolen, Tilly, Hunter, van Bergen en Henegouwen, Moolenaaar, and de Laat.
Hunziker, W., and Mellman, I. Expression of macrophage–lymphocyte fibronectin receptors in Madin–Darby canine kidney cells: polarity and transcytosis differ for isoforms with or without coated pit localization domains. 3291.
Husain-Chishti, A. *See* Byers, Husain-Chishti, Dubreuil, Branton, and Goldstein.
Hussein, S. *See* Schreiner, Bauer, Danilov, Hussein, Sczekan, and Juliano.
Huttner, W. B. *See* Rosa, Weiss, Pepperkok, Ansorge, Niehrs, Stelzer, and Huttner.
Hwang, S., Jascur, T., Vestweber, D., Pon, L., and Schatz, G. Disrupted yeast mitochondria can import precursor proteins directly through their inner membrane. 487.

Hyman, A. A. Centrosome movement in the early divisions of *Caenorhabditis elegans*: a cortical site determining centrosome postion. 1185.
Hynes, R. O., Marcantonio, E. E., Stepp, M. A., Urry, L. A., and Yee, G. H. Integrin heterodimer and receptor complexity in avian and mammalian cells. 409.
— *See* ffrench-Constant, Van De Water L., Dvorak, and Hynes.
— *See* Solowska, Guan, Marcantonio, Trevithick, Buck, and Hynes.
— *See* Solowska, Guan, Marcantonio, Trevithick, Buck, and Hynes.

I

Ihara, Y. *See* Kanai, Takemura, Oshima, Mori, Ihara, Yanagisawa, Masaki, and Hirokawa.
Imaizumi, M. *See* Notario, Gutkind, Imaizumi, Katamine, and Robbins.
Ingber, D. E., and Folkman, J. Mechanochemical switching between growth and differentiation during fibroblast growth factor–stimulated angiogenesis in vitro: role of extracellular matrix. 317.
Irwin, M. H. *See* Abrahamson, Irwin, St. John, Perry, Accavitti, Heck, and Couchman.
Isaacs, W. B., Kim, I. S., Struve, A., and Fulton, A. B. Biosynthesis of titin in cultured skeletal muscle cells. 2189.
Itoh, M. *See* Tsukita, Itoh, and Tsukita.

J

Jackson, R. *See* Jones, Jackson, Price, Patel, Ohanion, Lear, and Critchley.
Jackson, T. R. *See* Cheek, Jackson, O'Sullivan, Moreton, Berridge, and Burgoyne.
Jahn, R. *See* Navone, Di Gioia, Jahn, Browning, Greengard, and De Camilli.
Jahnsen, T. *See* Pariset, Feinberg, Dacheux, Øyen, Jahnsen, and Weinman.
Jaken, S., Leach, K., and Klauck, T. Association of type 3 protein kinase C with focal contacts in rat embryo fibroblasts. 697.
— *See* Leach, Powers, Ruff, Jaken, and Kaufmann.
Jascur, T. *See* Hwang, Jascur, Vestweber, Pon, and Schatz.
Jesaitis, A. J., Tolley, J. O., Bokoch, G. M., and Allen, R. A. Regulation of chemoattractant receptor interaction with transducing proteins by organization control in the plasma membrane of human neutrophils. 2783.
Jiang, W. *See* Burgess, Jiang, Mamajiwalla, and Kinsey.
Jirskog-Hed, B. *See* Oldberg, Jirskog-Hed, Axelsson, and Heingård.
Job, D. *See* Komesli, Tournier, Paintrand, Margolis, Job, and Bornens.
Johansen, K. M., Fehon, R. G., and Artavanis-Tsakonas, S. The *notch* gene product is a glycoprotein expressed on the cell surface of both epidermal and neuronal precursor cells during *Drosophila* development. 2427.
Johnson, A. E. *See* Krieg, Johnson, and Walter.
Johnson, K. R. *See* Disney, Johnson, Magnuson, Sylvester, and Reeves.
Joiner, K. A., Ganz, T., Albert, J., and Rotrosen, D. The opsonizing ligand on *Salmonella typhimurium* influences incorporation of specific, but not azurophil, granule constitutents into neutrophil phagosomes. 2771.
Joly, J. C., Flynn, G., and Purich, D. L. The microtubule-binding fragment of microtubule-associated protein-2: location of the protease-accessible site and identification of an assembly-promoting peptide. 2289.
Jones, J. C. R. *See* Klatte, Kurpakus, Grelling, and Jones.
Jones, P., Jackson, R., Price, G. J., Patel, B., Ohanion, V., Lear, A. L., and Critchley, D. R. Identification of a talin binding site in the cytoskeletal protein vinculin. 2917.
Jorgensen, A. O., Shen, A. C-Y., Arnold, W., Leung, A. T., and Campbell, K. P. Subcellular distribution of the 1, 4-dihydropyridine receptor in rabbit skeletal muscle in situ: an immunofluorescence and immunocolloidal gold-labeling study. 135.
Joshi, H. C., and Cleveland, D. W. Differential utilization of β-tubulin isotypes in differentiating neurites. 663.
Juliano, R. L. *See* Schreiner, Bauer, Danilov, Hussein, Sczekan, and Juliano.
Just, I. *See* Norgauer, Just, Aktories, and Sklar.

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Kabaeva, N. V. *See* Shirinsky, Antonov, Birukov, Sobolevsky, Romanov, Kabaeva, Antonova, and Smirnov.
Kabbash, L. *See* Nathan, Srimal, Farber, Sanchez, Kabbash, Asch, Gailit, and Wright.
Kaczman-Daniel, K. *See* Vertel, Velasco, LaFrance, Walters, and Kaczman-Daniel.
Kaiser, D. A. *See* Vandekerckhove, Kaiser, and Pollard.
Kaiser, H. W., O'Keefe, E., and Bennett, V. Adducin: Ca^{++}-dependent association with sites of cell–cell contact. 557.
Kalimi, G. H., and Lo, C. W. Gap junctional communication in the extraembryonic tissues of the gastrulating mouse embryo. 3015.
Kalshoven, H. *See* Kooijman, de Wildt, Beumer, van der Vliet, Homan, Kalshoven, Musgrave, and van den Ende.
Kam, Z. *See* Benveniste, Schlessinger, and Kam.
Kaminer, B. *See* Henson, Begg, Beaulieu, Fishkind, Bonder, Terasaki, Lebeche, and Kaminer.
Kanai, Y., Takemura, R., Oshima, T., Mori, H., Ihara, Y., Yanagisawa, M., Masaki, T., and Hirokawa, N. Expression of multiple tau isoforms and microtubule bundle formation in fibroblasts tau cDNA. 1173.
Kane, P. M. *See* Rothman, Yamashiro, Raymond, Kane, and Stevens.
Kaput, J., Brandriss, M. C., and Prussak-Wieckowska, T. In vitro import of cytochrome *c* peroxidase into the intermembrane space: release of the processed form by intact mitochondria. 101.
Kardami, E., and Fandrich, R. R. Basic fibroblast growth factor in atria and ventricles of the vertebrate heart. 1865.
Karess, R. E., and Glover, D. M. *rough deal*: a gene required for proper mitotic segregation in *Drosophila*. 2951.
Karnovsky, M. J. *See* Castellot, Pukac, Caleb, Wright, and Karnovsky.
Karsenti, E. *See* Bacallao, Antony, Dotti, Karsenti, Stelzer, and Simons.
Kartenbeck, J., Stuekenbrok, H., and Helenius, A. Endocytosis of simian virus 40 into the endoplasmic reticulum. 2721.
Kashgarian, M. *See* Marxer, Stieger, Quaroni, Kashgarian, and Hauri.
Katamine, S. *See* Notario, Gutkind, Imaizumi, Katamine, and Robbins.
Katoh, T., and Lowey, S. Mapping myosin light chains by immunoelectron microscopy. Use of anti-fluorescyl antibodies as structural probes. 1549.
Kaufmann, R., Frösch, D., Westphal, C., Weber, L., and Klein, C. E. Integrin VLA-3: ultrastructural localization at cell–cell contact sites of human cell cultures. 1807.
Kaufmann, S. *See* Leach, Powers, Ruff, Jaken, and Kaufmann.
Kawka, D. W. *See* Singer, Scott, Kawka, and Kazazis.
Kay, D. G. *See* Lai, Cameron, Wada, Doherty, Kay, Posner, and Bergeron.
Kazazis, D. M. *See* Singer, Scott, Kawka, and Kazazis.
Kedinger, M. *See* Simon-Assmann, Bouziges, Vigny, and Kedinger.
Kellogg, D. R., Field, C. M., and Alberts, B. M. Identification of microtubule-associated proteins in the centrosome, spindle and kinetochore of the early *Drosophila* embryo. 2977.
Kelly, T. *See* Mueller, Kelly, Pai, Dai, and Chen.
Kendrick-Jones, J. *See* Citi, Cross, Bagshaw, and Kendrick-Jones.
Kern, H. F. *See* Tooze, Kern, Fuller, and Howell.
Khawaja, S. *See* Gundersen, Khawaja, and Bulinski.
Kilkenny, A. E. *See* Yuspa, Kilkenny, Steinert, and Roop.
Killen, P. D. *See* Laurie, Horikoshi, Killen, Segui-Real, and Yamada.
Kim, I. S. *See* Isaacs, Kim, Struve, and Fulton.
Kindle, K. L., Schnell, R. A., Fernández, E., and Lefebvre, P. A. Stable nuclear transformation of *Chlamydomonas* using the *Chlamydomonas* gene for nitrate reductase. 2589.
Kinsey, W. *See* Burgess, Jiang, Mamajiwalla, and Kinsey.
Klagsbrun, M. *See* Rogelj, Klagsbrun, Atzmon, Kurokawa, Haimovitz, Fuks, and Vlodavsky.
Klatte, D. H., Kurpakus, M. A., Grelling, K. A., and Jones, J. C. R. Immunochemical characterization of three components of the hemidesmosome and their expression in cultured epithelial cells. 3377.

Klauck, T. *See* Jaken, Leach, and Klauck.
Klausner, R. D. *See* Bonifacino, Suzuki, Lippincott-Schwartz, Weissman, and Klausner.
Klein, C. E. *See* Kaufmann, Frösch, Westphal, Weber, and Klein.
Kluxen, B. *See* Mack, Kluxen, and Kruppa.
Klymkowsky, M. W. *See* Marazzi, Bard, Klymkowsky, and Rubin.
Knudsen, K. A., Smith, L., and McElwee, S. Involvement of cell surface phosphatidylinositol-anchored glycoproteins in cell–cell adhesion of chick embryo fibroblasts. 1779.
Komesli, S., Tournier, F., Paintrand, M., Margolis, R. L., Job, D., and Bornens, M. Mass isolation of calf thymus centrosomes: identification of a specific configuration. 2869.
Kondo, K., Watanabe, T., Sasaki, H., Uehara, Y., and Oishi, M. Induction of in vitro differentiation of mouse embryonal carcinoma (F9) and erythroleukemia (MEL) cells by herbimycin A, an inhibitor of protein phosphorylation. 285.
Konkel, M. E. *See* McKenna, Wang, and Konkel.
Kooijman, R., de Wildt, P., Beumer, S., van der Vliet, G., Homan, W., Kalshoven, H., Musgrave, A., and van den Ende, H. Wheat germ agglutinin induces mating reactions in *Chlamydomonas eugametos* by cross-linking agglutinin-associated glycoproteins in the flagellar membrane. 1677.
Kopan, R., and Fuchs, E. Use of retinoic acid to probe the relation between hyperproliferation-associated keratins and cell proliferation in normal and malignant epidermal cells. 295.
— *See* Coulombe, Kopan, and Fuchs.
Korn, E. D. *See* Miyata, Bowers, and Korn.
Koshland, D. *See* Palmer, Koval, and Koshland.
Koteliansky, V. E. *See* Glukhova, Frid, Shekhonin, Vasilevskaya, Grunwald, Saginati, and Koteliansky.
Koury, M. J. *See* Koury, Koury, and Bondurant.
Koury, S. T., Koury, M. J., and Bondurant, M. C. Cytoskeletal distribution and function during the maturation and enucleation of mammalian erythroblasts. 3005.
Koval, M. *See* Palmer, Koval, and Koshland.
Kreider, B. L. *See* Migliaccio, Migliaccio, Kreider, Rovera, and Adamson.
Krieg, U. C., Johnson, A. E., and Walter, P. Protein translocation across the endoplasmic reticulum membrane: identification photocross-linking of a 39-kD integral membrane glycoprotein as part of aputative translocation tunnel. 2033.
Krohne, G., Waizenegger, I., and Höger, T. H. The conserved carboxy-terminal cysteine of nuclear lamins is essential for lamin association with the nuclear envelope. 2003.
Kruijer, W. *See* Defize, Boonstra, Meisenhelder, Kruijer, Tertoolen, Tilly, Hunter, van Bergen en Henegouwen, Moolenaaar, and de Laat.
Kruppa, J. *See* Mack, Kluxen, and Kruppa.
Kurihara, T. *See* Sadler, Chiang, Kurihara, Rothblatt, Way, and Silver.
Kurokawa, M. *See* Rogelj, Klagsbrun, Atzmon, Kurokawa, Haimovitz, Fuks, and Vlodavsky.
Kurpakus, M. A. *See* Klatte, Kurpakus, Grelling, and Jones.
Kwan, A. P. L., Dickson, I. R., Freemont, A. J., and Grant, M. B. Comparative studies of type X collagen expression in normal and rachitic chicken epiphyseal cartilage. 1849.
Kwiatkowski, D. J. *See* Hartwig, Chambers, Hopcia, and Kwiatkowski.

L

LaFrance, S. *See* Vertel, Velasco, LaFrance, Walters, and Kaczman-Daniel.
Lai, W. H., Cameron, P. H., Doherty, J.-J. II, Posner, B. I., and Bergeron, J. J. M. Ligand-mediated autophosphorylation activity of the epidermal growth factor receptor during internalization. 2751.
—, **Cameron, P. H., Wada, I., Doherty, J.-J. II, Kay, D. G., Posner, B. I., and Bergeron, J. J. M.** Ligand-mediated internalization, recycling, and downregulation of the epidermal growth factor receptor in vivo. 2741.
Lamb, R. A. *See* Ng, Randall, and Lamb.
— *See* Parks, Hull, and Lamb.
Lambert, H. *See* Landry, Chrétien, Lambert, Hickey, and Weber.
Lamoureux, P. *See* Dennerll, Lamoureux, Buxbaum, and Heidmann.
Lampugnani, M. G. *See* Dejana, Lampugnani, Giorgi, Gaboli, Federici, Ruggeri, and Marchisio.
Land, H. *See* Ridley, Davis, Stroobant, and Land.
Landry, J., Chrétien, P., Lambert, H., Hickey, E., and Weber, L. A. Heat shock resistance conferred by expression of the human HSP27 gene in rodent cells. 7.
Lang, E., Mazauric-Stüker, M.-L., and Maelicke, A. States of developmental commitment of a mouse embryonal carcinoma cell line differentiating along a neural pathway. 2481.
Languino, L. R., Gehlsen, K. R., Wayner, E., Carter, W. G., Engvall, E., and Ruoslahti, E. Endothelial cells use $\alpha_2\beta_1$ integrin as a laminin receptor. 2455.
Lankford, K. L., and Letourneau, P. C. Evidence that calcium may control neurite outgrowth by regulating the stability of actin filaments. 1229.
Lanz, R. B. *See* Ruegg, Stoeckli, Lanz, Streit, and Sonderegger.
Lasky, L. A. *See* Bowen, Nguyen, and Lasky.
Laurie, G. W., Horikoshi, S., Killen, P. D., Segui-Real, B., and Yamada, Y. In situ hybridization reveals temporal and spatial changes in cellular expression mRNA for a laminin receptor, laminin, and basement membrane (type IV) collagen in the developing kidney. 1351.
Lazzarini, R. A. *See* Hudson, Friedrich, Behar, Dubois-Dalcq, and Lazzarini.
Leach, K. L., Powers, E. A., Ruff, V. A., Jaken, S., and Kaufmann, S. Type 3 protein kinase C localization to the nuclear envelope of phorbol ester–treated NIH 3T3 cells. 685.
Leach, K. *See* Jaken, Leach, and Klauck.
Lear, A. L. *See* Jones, Jackson, Price, Patel, Ohanion, Lear, and Critchley.
Lebeche, D. *See* Henson, Begg, Beaulieu, Fishkind, Bonder, Terasaki, Lebeche, and Kaminer.
LeBivic, A. *See* Lisanti, LeBivic, Sargiacomo, and Rodriguez-Boulan.
LeBlanc, A. C., Földvári, M., Spencer, D. F., Breckenridge, W. C., Fenwick, R. G., Williams, D. L., and Mezei, C. The apolipoprotein A-I gene is actively expressed in the rapidly myelinating avian peripheral nerve. 1245.
Lederkremer, G. *See* Amara, Lederkremer, and Lodish.
Lee, C., Ferguson, M., and Bo Chen, L. Construction of the endoplasmic reticulum. 2045.
Lefebvre, P. A. *See* Kindle, Schnell, Fernández, and Lefebvre.
Lehtola, L. *See* Sistonen, Hölttä, Lehväslaiho, Lehtola, and Alitalo.
Lehväslaiho, H. *See* Sistonen, Hölttä, Lehväslaiho, Lehtola, and Alitalo.
Lenhard, J. M., Siegel, A., and Free, S. J. Developing *Dictyostelium* cells contain the lysosomal enzyme α-mannosidase in a secretory granule. 2761.
Lennarz, W. J. *See* Farach-Carson, Carson, Collier, Lennarz, Park, and Wright.
Lessard, J. L. *See* Sawtell and Lessard.
Letourneau, P. C. *See* Lankford and Letourneau.
Leung, A. T. *See* Jorgensen, Shen, Arnold, Leung, and Campbell.
Lewis, S. A. *See* Noble, Lewis, and Cowan.
Li, J.-M., Hopper, A. K., and Martin, N. C. N^2,N^2-Dimethylguanosine-specific tRNA methyltransferase contains both nuclear and mitochondrial targeting signals in *Saccharomyces cerevisiae*. 1411.
Li, R., and Thomas, J. O. Identification of a human protein that interacts with nuclear localization signals. 2623.
Lichtenberg, B. *See* Hagstedt, Lichtenberg, Wille, Mandelkow, and Mandelkow.
Liebermann, L. *See* Cajot, Schleuning, Medcalf, Bamat, Testuz, Liebermann, and Sordat.
Lim, S.-S., Sammak, P. J., and Borisy, G. G. Progressive and spatially differentiated stability of microtubules in developing neuronal cells. 253.
Lin, J. J.-C. *See* Hegmann, Lin, and Lin.
— *See* Lourim and Lin.
Lin, J. L.-C. *See* Hegmann, Lin, and Lin.
Linberg, K. A. *See* Vaughan, Fisher, Bernstein, Hale, Linberg, and Matsumoto.
Lindroth, M. *See* Särndahl, Lindroth, Bengtsson, Fällman, Gustavsson, Stendahl, and Andersson.
Lingelbach, J. *See* Pierce, Mustoe, Lingelbach, Masakowski, Griffin, Senior, and Deuel.

Lipp, J., Flint, N., Haeuptle, M.-T., and Dobberstein, B. Structural requirements for membrane assembly of proteins spanning the membrane several times. 2013.
Lippincott-Schwartz, J. *See* Bonifacino, Suzuki, Lippincott-Schwartz, Weissman, and Klausner.
Lisanti, M. P., Caras, I. W., Davitz, M. A., and Rodriguez-Boulan, E. A glycophospholipid membrane anchor acts as an apical targeting signal in polarized epithelial cells. 2145.
—, LeBivic, A., Sargiacomo, M., and Rodriguez-Boulan, E. Steady-state distribution and biogenesis of endogenous Madin–Darby canine kidney glycoproteins: evidence for intracellular sorting and polarized cell surface delivery. 2117.
Lo, C. W. *See* Kalimi and Lo.
Locke, S. J. *See* Beckerle, Miller, Bertagnolli, and Locke.
Lodish, H. F. *See* Amara, Lederkremer, and Lodish.
Loeb, D. M. *See* Volonté, Rukenstein, Loeb, and Greene.
Loftus, D. J. *See* Dubinsky, Loftus, Fischbach, and Elson.
Lottspeich, F. *See* Noegel, Rapp, Lottspeich, Schleicher, and Stewart.
Lotz, M. M., Burdsal, C. A., Erickson, H. P., and McClay, D. R. Cell adhesion to fibronectin and tenascin: quantitative measurements of initial binding and subsequent strengthening response. 1795.
Lourim, D., and Lin, J. J.-C. Expression of nuclear lamin A and muscle-specific proteins in differentiating muscle cells in ovo and in vitro. 495.
Louvard, D. *See* Garcia, Coudrier, Carboni, Anderson, Vandekerkhove, Mooseker, Louvard, and Arpin.
Lowey, S. *See* Katoh and Lowey.
Luca, F. C., and Ruderman, J. V. Control of programmed cyclin destruction in a cell-free system. 1895.
Lucocq, J. M., Berger, E. G., and Warren, G. Mitotic Golgi fragments in HeLa cells and their role in the reassembly pathway. 463.
Ludosky, M. A. *See* Cartaud, Courvalin, Ludosky, and Cartaud.
Lukasiewicz, H. *See* Gustafson, Lukasiewicz, Wachtfogel, Norton, Schmaier, Niewiarowski, and Colman.
Lutz, Y. *See* Mähl, Lutz, Puvion, and Fuchs.

M

MacGlashan, D., Jr. Single-cell analysis of Ca^{++} changes in human lung mast cells: graded vs. all-or-nothing elevations after IgE-mediated stimulation. 123.
Mack, D., Kluxen, B., and Kruppa, J. Accessibility to proteases of the cytoplasmic G protein domain of vesicular stomatitis virus is increased during intracellular transport. 2057.
Mack, J. A. *See* Amerongen, Mack, Wilson, and Neutra.
Madreperla, S. A., Edidin, M., and Adler, R. Na^+, K^+-Adenosine triphosphatase polarity in retinal photoreceptors: a role for cytoskeletal attachments. 1483.
Maelicke, A. *See* Lang, Mazauric-Stüker, and Maelicke.
Magnuson, N. S. *See* Disney, Johnson, Magnuson, Sylvester, and Reeves.
Mähl, P., Lutz, Y., Puvion, E., and Fuchs, J.-P. Rapid effect of heat shock on two heterogeneous nuclear ribonucleoprotein-associated antigens in HeLa cells. 1927.
Maier, J. A. M. *See* Presta, Maier, and Ragnotti.
Mamajiwalla, S. *See* Burgess, Jiang, Mamajiwalla, and Kinsey.
Manabe, M. *See* O'Guin, Manabe, and T.-T. Sun.
Mandelkow, E.-M. *See* Hagstedt, Lichtenberg, Wille, Mandelkow, and Mandelkow.
Mandelkow, E. *See* Hagstedt, Lichtenberg, Wille, Mandelkow, and Mandelkow.
Manthorpe, M. *See* Muir, Engvall, Varon, and Manthorpe.
Marazzi, G., Bard, F., Klymkowsky, M. W., and Rubin, L. L. Microinjection of a monoclonal antibody against a 37-kD protein (tropomyosin 2) prevents the formation of new acetylcholine receptor clusters. 2337.
Marcantonio, E. E. *See* Hynes, Marcantonio, Stepp, Urry, and Yee.
— *See* Solowska, Guan, Marcantonio, Trevithick, Buck, and Hynes.
— *See* Solowska, Guan, Marcantonio, Trevithick, Buck, and Hynes.
Marceau, N. *See* Baribault, Blouin, Bourgon, and Marceau.
Marchisio, P. C. *See* Dejana, Lampugnani, Giorgi, Gaboli, Federici, Ruggeri, and Marchisio.
Margolis, R. L. *See* Komesli, Tournier, Paintrand, Margolis, Job, and Bornens.
Marsh, M. *See* Griffiths, Back, and Marsh.
Marshallsay, B. *See* Pon, Moll, Vestweber, Marshallsay, and Schatz.
Martin, N. C. *See* Li, Hopper, and Martin.
Martin, O. C. *See* Pagano, Sepanski, and Martin.
Martin, T. E. *See* Minoo, Sullivan, Solomon, Martin, Toft, and Scott.
Martin-Perez, J., Bar-Zvi, D., Branton, D., and Erikson, R. L. Transformation by Rous sarcoma virus induces clathrin heavy chain phosphorylation. 577.
Maruyama, K. *See* Horowits, Maruyama, and Podolsky.
Marxer, A., Stieger, B., Quaroni, A., Kashgarian, M., and Hauri, H.-P. $(Na^+ + K^+)$-ATPase and plasma membrane polarity of intestinal epithelial cells: presence of a brush border antigen in the distal large intestine that is immunologically related to β subunit. 1057.
Masaki, T. *See* Kanai, Takemura, Oshima, Mori, Ihara, Yanagisawa, Masaki, and Hirokawa.
Masakowski, V. R. *See* Pierce, Mustoe, Lingelbach, Masakowski, Griffin, Senior, and Deuel.
Massagué, J. *See* Andres, Stanley, Cheifetz, and Massagué.
Masukata, H. *See* Masumoto, Masukata, Muro, Nozaki, and Okazaki.
Masumoto, H., Masukata, H., Muro, Y., Nozaki, N., and Okazaki, T. A human centromere antigen (CENP-B) interacts with a short specific sequence in alphoid DNA, a human centromeric satellite. 1963.
Matsumoto, B. *See* Vaughan, Fisher, Bernstein, Hale, Linberg, and Matsumoto.
Mattei, M.-G. *See* Gennarini, Cibelli, Rougon, Mattei, and Goridis.
Matzuk, M. M., Spangler, M. M., Camel, M., Suganuma, N., and Boime, I. Mutagenesis and chimeric genes define determinants in the β-subunits of human chorionic gonadotropin and lutropin for secretion and assembly. 1429.
Maxfield, F. R. *See* Dunn, McGraw, and Maxfield.
— *See* Salzman and Maxfield.
May, G. S. The highly divergent β-tubulins of *Aspergillus nidulans* are functionally interchangeable. 2267.
Mazauric-Stüker, M.-L. *See* Lang, Mazauric-Stüker, and Maelicke.
McCaffrey, T. A., Falcone, D. J., Brayton, C. F., Agarwal, L A., Welt, F. G. P., and Weksler, B. B. Transforming growth factor-β activity is potentiated by heparin via dissociation of the transforming growth factor-β/α_2 macroglobulin inactive complex. 441.
McCarthy, K. J., Accavitti, M. A., and Couchman, J. R. Immunological characterization of a basement membrane–specific chondroitin sulfate proteoglycan. 3187.
McCarthy, M. P. *See* Mitra, McCarthy, and Stroud.
— *See* Mitra, McCarthy, and Stroud.
McClay, D. R. *See* Lotz, Burdsal, Erickson, and McClay.
McDonald, J. A. *See* Wayner, Garcia-Pardo, Humphries, McDonald, and Carter.
McElwee, S. *See* Knudsen, Smith, and McElwee.
McGraw, T. E. *See* Dunn, McGraw, and Maxfield.
McIntosh, J. R. *See* Olmsted, Stemple, Saxton, Neighbors, and McIntosh.
McKenna, N. M., Wang, Y.-L., and Konkel, M. E. Formation and movement of myosin-containing structures in living fibroblasts. 1163.
McNeil, P. L., Muthukrishnan, L., Warder, E., and D'Amore, P. A. Growth factors are released by mechanically wounded endothelial cells. 811.
Meda, P. *See* Pepper, Spray, Chanson, Montesano, Orci, and Meda.
Medcalf, R. L. *See* Cajot, Schleuning, Medcalf, Bamat, Testuz, Liebermann, and Sordat.
Meisenhelder, J. *See* Defize, Boonstra, Meisenhelder, Kruijer, Tertoolen, Tilly, Hunter, van Bergen en Henegouwen, Moolenaaar, and de Laat.
Mellman, I. *See* Hunziker and Mellman.
Mendler, M. *See* Bruckner, Hörler, Mendler, Houze, Winterhalter, Eich-Bender, and Spycher.
Mengele, R. *See* Ertl, Mengele, Wenzl, Engel, and Sumper.
Merte, C. *See* Achler, Filmer, Merte, and Drenckhahn.
— *See* Tilney, Tilney, Stephens, Merte, Drenckhahn, Cotanche, and Bretscher.
Mezei, C. *See* LeBlanc, Földvári, Spencer, Breckenridge, Fenwick, Williams, and Mezei.

Migliaccio, A. R. *See* Migliaccio, Migliaccio, Kreider, Rovera, and Adamson.
Migliaccio, G., Migliaccio, A. R., Kreider, B. L., Rovera, G., and Adamson, J. W. Selection of lineage-restricted cell lines immortalized at different stages of hematopoietic differentiation from the murine cell line 32D. 833.
Milarski, K. L., and Morimoto, R. I. Mutational analysis of the human HSP70 protein: distinct domains for nucleolar localization and adenosine triphosphate binding. 1947.
Miller, D. E. *See* Beckerle, Miller, Bertagnolli, and Locke.
Miller, K. G., Field, C. M., and Alberts, B. M. Actin-binding proteins from *Drosophila* embryos: a complex network of interacting proteins detected by F-actin affinity chromatoghraphy. 2963.
Miller, K. R. *See* Hinshaw and Miller.
Minden, J. S., Agard, D. A., Sedat, J. W., and Alberts, B. M. Direct cell lineage analysis in *Drosophila melanogaster* by time-lapse, three-dimensional optical microscopy of living embryos. 505.
Minoo, P., Sullivan, W., Solomon, L. R., Martin, T. E., Toft, D. O., and Scott, R. E. Loss of proliferative potential during terminal differentiation coincides with the decreased abundance of a subset of heterogeneous ribonuclear proteins. 1937.
Mitchison, T. J. Polewards microtubules flux in the mitotic spindle: evidence from photoactivation of fluorescence. 637.
Mitra, A. K., McCarthy, M. P., and Stroud, R. M. Three-dimensional structure of the nicotinic acetylcholine receptor, and location of the major associationed 43-kD cytoskeletal protein, determined at 22 Å by low dose electron microscopy and x-ray diffraction to 12.5 Å. 755.
—, McCarthy, M. P., and Stroud, R. M. Correction. 1885.
Miyata, H., Bowers, B., and Korn, E. D. Plasma membrane association of *Acanthamoeba* myosin I. 1519.
Moellmann, G. *See* Dotto, Moellmann, Ghosh, Edwards, and Halaban.
Moir, R. D. *See* Stewart, Quinlan, and Moir.
Moll, T. *See* Pon, Moll, Vestweber, Marshallsay, and Schatz.
Montell, S. J., and Goodman, C. S. *Drosophila* laminin: sequence of B2 subunit and expression of all three subunits during embryogenesis. 2441.
Montesano, R. *See* Pepper, Spray, Chanson, Montesano, Orci, and Meda.
Moolenaaar, W. H. *See* Defize, Boonstra, Meisenhelder, Kruijer, Tertoolen, Tilly, Hunter, van Bergen en Henegouwen, Moolenaaar, and de Laat.
Moore, H.-P. H. *See* Rivas and Moore.
Moore, S. E. *See* Doherty, Barton, Dickson, Seaton, Rowett, Moore, Gower, and Walsh.
Mooseker, M. *See* Garcia, Coudrier, Carboni, Anderson, Vandekerkhove, Mooseker, Louvard, and Arpin.
Mooseker, M. S., Conzelman, K. A., Coleman, T. R., Heuser, J. E., and Sheetz, M. P. Characterization of intestinal microvillar membrane disks: detergent-resistant membrane sheets enriched in associated brush border myosin I (110K-calmodulin). 1153.
— *See* Anderson, Van Itallie, Peterson, Stevenson, Carew, and Mooseker.
Moreton, R. B. *See* Cheek, Jackson, O'Sullivan, Moreton, Berridge, and Burgoyne.
Mori, H. *See* Kanai, Takemura, Oshima, Mori, Ihara, Yanagisawa, Masaki, and Hirokawa.
Morimoto, R. I. *See* Milarski and Morimoto.
Morris, S. J. *See* Sarkar, Morris, Eidelman, Zimmerberg, and Blumenthal.
Morrissey, J. H. *See* Drake, Ruf, Morrissey, and Edgington.
Moscatelli, D., and Quarto, N. Transformation of NIH 3T3 cells with basic fibroblast growth factor or the hst/K-*fgf* oncogene causes downregulation of the fibroblast growth factor receptor: reversal of morphological transformation and restoration of receptor number by suramin. 2519.
— *See* Rifkin and Moscatelli.
Mostov, K. E. *See* Breitfeld, Harris, and Mostov.
Mueller, S. C., Kelly, T., Dai, M., Dai, H., and Chen, W.-T. Dynamic cytoskeleton–integrin associations induced by cell binding to immobilized fibronectin. 3455.
Muir, D., Engvall, E., Varon, S., and Manthorpe, M. Schwannoma cell–derived inhibitor of the neurite-promoting activity of laminin. 2353.
Muramatsu, M. *See* Nakano and Muramatsu.
Muro, Y. *See* Masumoto, Masukata, Muro, Nozaki, and Okazaki.
Murphy-Erdosh, C. *See* Gu, Ralston, Murphy-Erdosh, Black, and Hall.
Murphy-Ullrich, J. E., and Höök, M. Thrombospondin modulates focal adhesions in endothelial cells. 1309.
Musgrave, A. *See* Kooijman, de Wildt, Beumer, van der Vliet, Homan, Kalshoven, Musgrave, and van den Ende.
Mustoe, T. A. *See* Pierce, Mustoe, Lingelbach, Masakowski, Griffin, Senior, and Deuel.
Muthukrishnan, L. *See* McNeil, Muthukrishnan, Warder, and D'Amore.

N

Naccache, P. H. *See* Therrien and Naccache.
Nadin, C. Y., Rogers, J., Tomlinson, S., and Edwardson, J. M. A specific interaction in vitro between pancreatic zymogen granules and plasma membranes: stimulation by G-protein activators but not by Ca^{2+}. 2801.
Nakache, M. *See* Picker, Nakache, and Butcher.
Nakano, A., and Muramatsu, M. A novel GTP-binding protein, Sarlp, is involved in transport from the endoplasmic reticulum to the Golgi apparatus. 2677.
Nathan, C., Srimal, S., Farber, C., Sanchez, E., Kabbash, L., Asch, A., Gailit, J., and Wright, S. D. Cytokine-induced respiratory burst of human neutrophils: dependence on extracellular matrix proteins and CD11/CD18 integrins. 1341.
Nave, R., Fürst, D. O., and Weber, K. Visualization of the polarity of isolated titin molecules: a single globular head on a long thin rod as the M band anchoring domain? 2177.
Navone, F., Di Gioia, G., Jahn, R., Browning, M., Greengard, P., and De Camilli, P. Microvesicles of the neurohypophysis are biochemically related to small synaptic vesicles of presynaptic nerve terminals. 3425.
Navre, M., and Ringold, G. M. Differential effects of fibroblast growth factor and tumor promoters on the initiation and maintenance of adipocyte differentiation. 1857.
Neighbors, B. W. *See* Olmsted, Stemple, Saxton, Neighbors, and McIntosh.
Nelson, W. J. *See* Pasdar and Nelson.
Neupert, W. *See* Rassow, Guiard, Wienhues, Herzog, Hartl, and Neupert.
Neutra, M. R. *See* Amerongen, Mack, Wilson, and Neutra.
— *See* Trahair, Neutra, and Gordon.
Ng, D. T. W., Randall, R. E., and Lamb, R. A. Intracellular maturation and transport of the SV5 type II glycoprotein hemagglutinin-neuraminidase: specific and transient association with GRP78-BiP in the endoplasmic reticulum and extensive internalization from the cell surface. 3273.
Nguyen, T. *See* Bowen, Nguyen, and Lasky.
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Nicklas, R. B. The motor for poleward chromosome movement in anaphase is in or near the kinetochore. 2245.
Niehrs, C. *See* Rosa, Weiss, Pepperkok, Ansorge, Niehrs, Stelzer, and Huttner.
Niewiarowski, S. *See* Gustafson, Lukasiewicz, Wachtfogel, Norton, Schmaier, Niewiarowski, and Colman.
Nishimoto, T. *See* Ohtsubo, Okazaki, and Nishimoto.
Noble, M., Lewis, S. A., and Cowan, N. J. The microtubule binding domain of microtubule-associated protein MAP1B contains a repeated sequence motif unrelated to that of MAP2 and Tau. 3367.
Noda, M., and Vogel, R. Fibroblast growth factor enhances type β1 transforming growth factor gene expression in osteoblast-like cells. 2529.
Noegel, A. A., Rapp, S., Lottspeich, F., Schleicher, M., and Stewart, M. The *Dictyostelium* gelation factor shares a putative actin binding site with α-actinins and dystrophin and also has a rod domain containing six 100-residue motifs that appear to have a cross-beta conformation. 607.
Norgauer, J., Just, I., Aktories, K., and Sklar, L. A. Influence of botulinum C2 toxin on F-actin and *N*-formyl peptide receptor dynamics in human neutrophils. 1133.
Norton, K. J. *See* Gustafson, Lukasiewicz, Wachtfogel, Norton, Schmaier, Niewiarowski, and Colman.

Notario, V., Gutkind, J. S., Imaizumi, M., Katamine, S., and Robbins, K. C. Expression of the *fgr* protooncogene product as a function of myelomonocytic cell maturation. 3129.
Novick, P. J. *See* Cleves, Novick, and Bankaitis.
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Nozaki, N. *See* Masumoto, Masukata, Muro, Nozaki, and Okazaki.

O

O'Guin, W. M., Manabe, M., and T.-T. Sun Association of a basic 25K protein with membrane coating granules of human epidermis. 2313.
Ohanion, V. *See* Jones, Jackson, Price, Patel, Ohanion, Lear, and Critchley.
Ohtsubo, M., Okazaki, H., and Nishimoto, T. The RCC1 protein, a regulator for the onset of chromosome condensation locates in the nucleus and binds to DNA. 1389.
Oishi, M. *See* Kondo, Watanabe, Sasaki, Uehara, and Oishi.
Okabe, S., and Hirokawa, N. Incorporation and turnover of biotin-labeled actin microinjected into fibroblastic cells: an immunoelectron microscopic study. 1581.
Okazaki, H. *See* Ohtsubo, Okazaki, and Nishimoto.
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O'Keefe, E. *See* Kaiser, O'Keefe, and Bennett.
Oldberg, A., Jirskog-Hed, B., Axelsson, S., and Heingård, D. Regulation of bone sialoprotein (BSP) mRNA by steroid hormones. 3183.
Olins, A. L. *See* Olins, Olins, Cacheiro, and Tan.
Olins, D. E., Olins, A. L., Cacheiro, L. H., and Tan, E. M. Proliferating cell nuclear antigen/cyclin in the ciliate *Euplotes eurystomus*: localization in the replication band and in micronuclei. 1399.
Olive, J. *See* de Vitry, Olive, Drapier, Recouvreur, and Wollman.
Olmsted, J. B., Stemple, D. L., Saxton, W. M., Neighbors, B. W., and McIntosh, J. R. Cell cycle–dependent changes in the dynamics of MAP 2 and MAP 4 in cultured cells. 211.
Olsen, B. R. *See* Sugrue, Gordon, Seyer, Dublet, van der Rest, and Olsen.
— *See* Sugrue, Gordon, Seyer, Dublet, van der Rest, and Olsen.
Orci, L. *See* Pepper, Spray, Chanson, Montesano, Orci, and Meda.
Orgebin-Crist, M.-C. *See* Tulsiani, Skudlarek, and Orgebin-Crist.
O'Rourke, K. *See* Prochownik, O'Rourke, and Dixit.
Osborn, M. *See* Fürst, Osborn, and Weber.
Osborne, M.A. *See* Silver, Sadler, and Osborne.
Oshima, T. *See* Kanai, Takemura, Oshima, Mori, Ihara, Yanagisawa, Masaki, and Hirokawa.
O'Sullivan, A. J. *See* Cheek, Jackson, O'Sullivan, Moreton, Berridge, and Burgoyne.
Øyen, O. *See* Pariset, Feinberg, Dacheux, Øyen, Jahnsen, and Weinman.
Oyler, G. A., Higgins, G. A., Hart, R. A., Battenberg, E., Billingsley, M., Bloom, F. E., and Wilson, M. C. The identification of a novel synaptosomal-associated protein, SNAP-25, differentially expressed by neuronal subpopulations. 3039.

P

Pagano, R. E., Sepanski, M. A., and Martin, O. C. Molecular trapping of a fluorescent ceramide analogue at the Golgi apparatus of fixed cells: interaction with endogenous lipids provides a *trans*-Golgi marker for both light and electron microscopy. 2067.
Paintrand, M. *See* Bornens, Paintrand, and Celati.
— *See* Komesli, Tournier, Paintrand, Margolis, Job, and Bornens.
Palmer, R. E., Koval, M., and Koshland, D. The dynamics of chromosome movement in the budding yeast *Saccharomyces cerevisiae*. 3355.
Pardue, M. L. *See* Saide, Chin-Bow, Hogan-Sheldon, Busquets-Turner, Vigoreaux, Valgeirsdottir, and Pardue.
Pariset, C., Feinberg, J., Dacheux, J.-L., Øyen, O., Jahnsen, T., and Weinman, S. Differential expression and subcellular localization for subunits of cAMP-dependent protein kinase during RAM spermatogenesis. 1195.
Park, H. R. *See* Farach-Carson, Carson, Collier, Lennarz, Park, and Wright.
Parks, G. D., Hull, J. D., and Lamb, R. A. Transposition of domains between the M^2 and HN viral membrane proteins results in polypeptides which can adopt more than one membrane orientation. 2023.
Parton, R. G., Prydz, K., Bomsel, M., Simons, K., and Griffiths, G. Meeting of the apical and basolateral endocytic pathways of the Madin–Darby canine kidney cell in late endosomes. 3259.
— *See* Bomsel, Prydz, Parton, Gruenberg, and Simons.
Paschetto, M. *See* Southwick, Dabiri, Paschetto, and Zigmond.
Pasdar, M., and Nelson, W. J. Regulation of desmosome assembly in epithelial cells: kinetics of synthesis, transport, and stabilization of desmoglein I, a major protein of the membrane core domain. 163.
Pasternak, C., Flicker, P. F., Ravid, S., and Spudich, J. A. Intermolecular versus intramolecular interactions of *Dictyostelium* myosin: possible regulation by heavy chain phosphorylation. 203.
Patel, B. *See* Jones, Jackson, Price, Patel, Ohanion, Lear, and Critchley.
Paulsson, M. *See* Heremans, Van Der Schueren, De Cock, Paulsson, Cassiman, Van Den Berghe, and David.
Peattie, D. A., Alonso, R. A., Hein, A., and Caulfield, J. P. Ultrastructural localization of giardins to the edges of disk microribbons of *Giardia lamblia* and the nucleotide and deduced protein sequence of alpha giardin. 2323.
Pepper, M. S., Spray, D. C., Chanson, M., Montesano, R., Orci, L., and Meda, P. Junctional communication is induced in migrating capillary endothelial cells. 3027.
Pepperkok, R. *See* Rosa, Weiss, Pepperkok, Ansorge, Niehrs, Stelzer, and Huttner.
Perry, E. W. *See* Abrahamson, Irwin, St. John, Perry, Accavitti, Heck, and Couchman.
Persohn, E. *See* Seilheimer, Persohn, and Schachner.
Pesheva, P., Spiess, E., and Schachner, M. J1–160 and J1–180 are oligodendrocyte-secreted nonpermissive substrates for cell adhesion. 1765.
Peterson, M. D. *See* Anderson, Van Itallie, Peterson, Stevenson, Carew, and Mooseker.
Pfeffer, U., Ferrari, N., Tosetti, F., and Vidali, G. Correction. 3214.
—, **Ferrari, N., Tosetti, F., and Vidali, G.** Histone acetylation in conjugating *Tetrahymena thermophila*. 1007.
Philp, R. *See* Davies, Warwick, Totty, Philp, Helfrich, and Horton.
Picard, A., Capony, J. P., Brautigan, D. L., and Dorée, M. Involvement of protein phosphatases 1 and 2A in the control of M phase-promoting factor (MPF) activity in starfish. 3347.
Picker, L. J., Nakache, M., and Butcher, E. C. Monoclonal antibodies to human lymphocyte homing receptors define a novel class of adhesion molecules on diverse cell types. 927.
Pidoux, I. *See* Poole and Pidoux.
Pierce, G. F., Mustoe, T. A., Lingelbach, J., Masakowski, V. R., Griffin, G. L., Senior, R. M., and Deuel, T. F. Platelet-derived growth factor and transforming growth factor-β enhance tissue repair activities by unique mechanisms. 429.
Pihlajaniemi, T. *See* Sandberg, Tammimen, Hirvonen, Vuorio, and Pihlajaniemi.
Piñol-Roma, S., Swanson, M. S., Gall, J. G., and Dreyfuss, G. A novel heterogeneous nuclear RNP protein with a unique distribution on nascent transcripts. 2575.
Pizzey, J. A., Rowett, L. H., Barton, C. H., Dickson, G., and Walsh, F. S. Intercellular adhesion mediated by human muscle neural cell adhesion molecule: effects of alternative exon usage. 3465.
Podolsky, R. J. *See* Horowits, Maruyama, and Podolsky.
Pollard, T. D. *See* Rimm and Pollard.
— *See* Sinard and Pollard.
— *See* Sinard, Stafford, and Pollard.
— *See* Vandekerckhove, Kaiser, and Pollard.
Pon, L., Moll, T., Vestweber, D., Marshallsay, B., and Schatz, G. Protein import into mitochondria: ATP-dependent protein translocation activity in a submitochondrial fraction enriched in membrane contact sites and specific protein. 2603.
— *See* Hwang, Jascur, Vestweber, Pon, and Schatz.
Poole, A. R., and Pidoux, I. Immunoelectron microscopic studies of type X collagen in endochondral ossification. 2547.
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Poritz, M. A. *See* Hann, Poritz, and Walter.
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Posner, B. I. *See* Lai, Cameron, Doherty, Posner, and Bergeron.
— *See* Lai, Cameron, Wada, Doherty, Kay, Posner, and Bergeron.
Powers, E. A. *See* Leach, Powers, Ruff, Jaken, and Kaufmann.
Presta, M., Maier, J. A. M., and Ragnotti, G. The mitogenic signaling pathway but not the plasminogen activator–inducing pathway of basic fibroblast growth factor is mediated through protein kinase C in fetal bovine aortic endothelial cells. 1877.
Price, G. J. *See* Jones, Jackson, Price, Patel, Ohanion, Lear, and Critchley.
Prochownik, E. V., O'Rourke, K., and Dixit, V. M. Expression and analysis of COOH-terminal deletions of the human thrombospondin molecule. 843.
Prussak-Wieckowska, T. *See* Kaput, Brandriss, and Prussak-Wieckowska.
Prydz, K. *See* Bomsel, Prydz, Parton, Gruenberg, and Simons.
— *See* Parton, Prydz, Bomsel, Simons, and Griffiths.
Pukac, L. A. *See* Castellot, Pukac, Caleb, Wright, and Karnovsky.
Pumplin, D. W. Acetylcholine receptor clusters of rat myotubes have at least three domains with distinctive cytoskeletal and membranous components. 739.
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Quarto, N. *See* Moscatelli and Quarto.
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R

Raff, M. C. *See* Hart, Richardson, Bolsover, and Raff.
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Ralston, E., and Hall, Z. W. Intracellular and surface distribution of a membrane protein (CD8) derived from a single nucleus in multinucleated myotubes. 2345.
— *See* Gu, Ralston, Murphy-Erdosh, Black, and Hall.
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Rapp, S. *See* Noegel, Rapp, Lottspeich, Schleicher, and Stewart.
Rappaport, R. *See* Devore, Conrad, and Rappaport.
Rapraeger, A. Transforming growth factor (type β) promotes the addition of chondroitin sulfate chains to the cell surface proteoglycan (syndecan) of mouse mammary epithelia. 2509.
Rassow, J., Guiard, B., Wienhues, U., Herzog, V., Hartl, F.-U., and Neupert, W. Translocation arrest by reversible folding of a precursor protein imported into mitochondria. A means to quantitate translocation contact sites. 1421.
Ravid, S. *See* Pasternak, Flicker, Ravid, and Spudich.
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Recouvreur, M. *See* de Vitry, Olive, Drapier, Recouvreur, and Wollman.
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— *See* Taylor, Reedy, Córdova, and Reedy.
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— *See* Taylor, Reedy, Córdova, and Reedy.
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Richardson, J. *See* Ebert, Freeze, Richardson, Dimond, and Cardelli.
Richardson, W. D. *See* Hart, Richardson, Bolsover, and Raff.
Ridley, A. J., Davis, J. B., Stroobant, P., and Land, H. Transforming growth factor β1 and β2 are mitogens for rat Schwann cells. 3419.
Rieder, C. L. *See* Wadsworth, Shelden, Rupp, and Rieder.
Rifkin, D. B., and Moscatelli, D. Recent developments in the cell biology of basic fibroblast growth factor. 1.
— *See* Sato and Rifkin.
Rimm, D. L., and Pollard, T. D. Purification and characterization of an *Acanthamoeba* nuclear actin-binding protein. 585.
Ringold, G. M. *See* Navre and Ringold.
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— *See* Lisanti, Caras, Davitz, and Rodriguez-Boulan.
— *See* Lisanti, LeBivic, Sargiacomo, and Rodriguez-Boulan.
Rogelj, S., Klagsbrun, M., Atzmon, R., Kurokawa, M., Haimovitz, A., Fuks, Z., and Vlodavsky, I. Basic fibroblast growth factor is an extracellular matrix component requried for supporting the proliferation of vascular endothelial cells and the differentiation of PC12 cells. 823.
Rogers, J. *See* Nadin, Rogers, Tomlinson, and Edwardson.
Romanov, Y. A. *See* Shirinsky, Antonov, Birukov, Sobolevsky, Romanov, Kabaeva, Antonova, and Smirnov.
Roop, D. R. *See* Yuspa, Kilkenny, Steinert, and Roop.
Rosa, P., Weiss, U., Pepperkok, R., Ansorge, W., Niehrs, C., Stelzer, E. H. K., and Huttner, W. B. An antibody against secretogranin I (chromogranin B) is packaged into secretory granules. 17.
Rose, J. K. *See* Zagouras and Rose.
Rosen, S. D. *See* Geoffroy and Rosen.
Rosenbaum, J. L. *See* Williams, Velleca, Curry, and Rosenbaum.
Rosner, M. R. *See* Garcia, Gehm, and Rosner.
Ross, P. M. Cellular and adenovirus d1312 DNA metabolism in cycling or mitotic human cultures exposed to supralethal gamma radiation. 1993.
Rothblatt, J. A., Deshaies, R. J., Sander, S. L., Daum, G., and Schekman, R. Multiple genes are required for proper insertion of secretory proteins into the endoplasmic reticulum in yeast. 2641.
Rothblatt, J. *See* Sadler, Chiang, Kurihara, Rothblatt, Way, and Silver.
Rothman, J. H., Yamashiro, C. T., Raymond, C. K., Kane, P. M., and Stevens, T. H. Acidification of the lysosome-like vacuole and the vacuolar H^+-ATPase are deficient in two yeast mutants that fail to sort vacuolar proteins. 93.
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— *See* Pizzey, Rowett, Barton, Dickson, and Walsh.
Rubin, L. L. *See* Marazzi, Bard, Klymkowsky, and Rubin.
Ruderman, J. V. *See* Luca and Ruderman.
Ruegg, M. A., Stoeckli, E. T., Lanz, R. B., Streit, P., and Sonderegger, P. A homologue of the axonally secreted protein axonin-1 is an integral membrane protein of nerve fiber tracts involved in neurite fasciculation. 2363.
Ruf, W. *See* Drake, Ruf, Morrissey, and Edgington.
Ruff, V. A. *See* Leach, Powers, Ruff, Jaken, and Kaufmann.
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Rukenstein, A. *See* Volonté, Rukenstein, Loeb, and Greene.
Rungger-Brändle, E., Achtstätter, T., and Franke, W. W. An epithelium-type cytoskeleton in a glial cell: astrocytes of amphibian optic nerves contain cytokeratin filaments and are connected by desmosomes. 705.
Ruohola, H. *See* Bacon, Salminen, Ruohola, Novick, and Ferro-Novick.
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Rupp, G. *See* Wadsworth, Shelden, Rupp, and Rieder.
Russ, G. *See* Doms, Russ, and Yewdell.

S

Sadler, I., Chiang, A., Kurihara, T., Rothblatt, J., Way, J., and Silver, P. A yeast gene important for protein assembly into the endoplasmic reticulum and the nucleus has homlogy to DnaJ, an *Escherichia coli* heat schock protein. 2665.
— *See* Silver, Sadler, and Osborne.

Sage, H., Vernon, R. B., Funk, S. E., Everitt, E. A., and Angello, J. SPARC, a secreted protein associated with cellular proliferation, inhibits cell spreading in vitro and exhibits Ca^{2+}-dependent binding to the extracellular matrix. 341.
Saginati, M. *See* Glukhova, Frid, Shekhonin, Vasilevskaya, Grunwald, Saginati, and Koteliansky.
Saide, J. D., Chin-Bow, S., Hogan-Sheldon, J., Busquets-Turner, L., Vigoreaux, J. O., Valgeirsdottir, K., and Pardue, M. L. Characterization of components of Z-bands in the fibrillar flight muscle of *Drosophila melanogaster*. 2157.
Salminen, A., and Novick, P. J. The Sec15 protein responds to the function of the GTP-binding protein, Sec4, to control vesicular traffic in yeast. 1023.
— *See* Bacon, Salminen, Ruohola, Novick, and Ferro-Novick.
Salzman, N. H., and Maxfield, F. R. Fusion-accessibility of endocytic compartments along the recycling and lysosomal endocytic pathways in intact cells. 2097.
Sammak, P. J. *See* Lim, Sammak, and Borisy.
Sanchez, E. *See* Nathan, Srimal, Farber, Sanchez, Kabbash, Asch, Gailit, and Wright.
Sandberg, M., Tammimen, M., Hirvonen, H., Vuorio, E., and Pihlajaniemi, T. Expression of mRNAs coding for the α1 chain of type XIII collagen inman fetal tissues: comparison with expression of mRNAs for collagen types I, II, and III. 1371.
Sander, S. L. *See* Rothblatt, Deshaies, Sander, Daum, and Schekman.
Sappino, A.-P., Huarte, J., Belin, D., and Vassalli, J.-D. Plasminogen activators in tissue remodeling and invasion: mRNA localization in mouse ovaries and implanting embryos. 2471.
Sargiacomo, M. *See* Lisanti, LeBivic, Sargiacomo, and Rodriguez-Boulan.
Sarkar, D. P., Morris, S. J., Eidelman, O., Zimmerberg, J., and Blumenthal, R. Initial stages of influenza hemagglutinin–induced cell fusion monitored simultaneously by two fluorescent events: cytoplasmic continuity and lipid mixing. 113.
Särndahl, E., Lindroth, M., Bengtsson, T., Fällman, M., Gustavsson, J., Stendahl, O., and Andersson, T. Association of ligand-receptor complexes with actin filaments in human neutrophils: a possible regulatory role for a G-protein. 2791.
Sasaki, H. *See* Kondo, Watanabe, Sasaki, Uehara, and Oishi.
Satlin, L. M., and Schwartz, G. J. Cellular remodeling of HCO_3-secreting cells in rabbit renal collecting duct in response to an acidic environment. 1279.
Sato, Y., and Rifkin, D. B. Inhibition of endothelial cell movement by pericytes and smooth muscle cells: activation of a latent transforming growth factor–β1–like molecule by plasmin during coculture. 309.
Sawtell, N. M., and Lessard, J. L. Cellular distribution of smooth muscle actin during mammalian embryogenesis: expression of the α-vascular but not the γ-enteric isoform in differentiating striated myocytes. 2929.
Saxton, W. M. *See* Olmsted, Stemple, Saxton, Neighbors, and McIntosh.
Schachner, M. *See* Pesheva, Spiess, and Schachner.
— *See* Seilheimer, Persohn, and Schachner.
Schatz, G. *See* Hwang, Jascur, Vestweber, Pon, and Schatz.
— *See* Pon, Moll, Vestweber, Marshallsay, and Schatz.
Schekman, R. *See* Deshaies and Schekman.
— *See* Rothblatt, Deshaies, Sander, Daum, and Schekman.
Schlaeppi, K., Deflorin, J., and Seebeck, T. The major component of the paraflagellar rod of *Trypanosoma brucei* is a helical protein which is encoded by two identical, tandemly linked genes. 1689.
Schleicher, M. *See* Noegel, Rapp, Lottspeich, Schleicher, and Stewart.
Schlessinger, J. *See* Benveniste, Schlessinger, and Kam.
Schleuning, W.-D. *See* Cajot, Schleuning, Medcalf, Bamat, Testuz, Liebermann, and Sordat.
Schmaier, A. H. *See* Gustafson, Lukasiewicz, Wachtfogel, Norton, Schmaier, Niewiarowski, and Colman.
Schmid, W. *See* Shelly, Tynan, Schmid, Schutz, and Yeoh.
Schnell, R. A. *See* Kindle, Schnell, Fernández, and Lefebvre.
Schreiner, C. L., Bauer, J. S., Danilov, Y. N., Hussein, S., Sczekan, M. M., and Juliano, R. L. Isolation and characterization of Chinese hamster ovary cell variants deficient in the expression of fibronectin receptor. 3157.
Schroeder, N. A. *See* Wessels, Schroeder, Voss, Hall, Condeelis, and Soll.
Schutz, G. *See* Shelly, Tynan, Schmid, Schutz, and Yeoh.
Schwartz, G. J. *See* Satlin and Schwartz.
Schwartz, M. A. *See* Tranter, Sugrue, and Schwartz.
Schwarzbauer, J. E., Spencer, C. S., and Wilson, C. L. Selective secretion of alternatively spliced fibronectin variants. 3445.
Scott, R. E. *See* Minoo, Sullivan, Solomon, Martin, Toft, and Scott.
Scott, S. *See* Singer, Scott, Kawka, and Kazazis.
Sczekan, M. M. *See* Schreiner, Bauer, Danilov, Hussein, Sczekan, and Juliano.
Seaton, P. *See* Doherty, Barton, Dickson, Seaton, Rowett, Moore, Gower, and Walsh.
Sedat, J. W. *See* Minden, Agard, Sedat, and Alberts.
Seebeck, T. *See* Schlaeppi, Deflorin, and Seebeck.
Seeds, N. W. *See* Verrall and Seeds.
Segui-Real, B. *See* Laurie, Horikoshi, Killen, Segui-Real, and Yamada.
Seilheimer, B., Persohn, E., and Schachner, M. Antibodies to the L1 adhesion molecule inhibit Schwann ensheathment of neurons in vitro. 3095.
Senior, R. M. *See* Pierce, Mustoe, Lingelbach, Masakowski, Griffin, Senior, and Deuel.
Sepanski, M. A. *See* Pagano, Sepanski, and Martin.
Seyer, J. *See* Sugrue, Gordon, Seyer, Dublet, van der Rest, and Olsen.
— *See* Sugrue, Gordon, Seyer, Dublet, van der Rest, and Olsen.
Sheetz, M. P. *See* Mooseker, Conzelman, Coleman, Heuser, and Sheetz.
Shekhonin, B. V. *See* Glukhova, Frid, Shekhonin, Vasilevskaya, Grunwald, Saginati, and Koteliansky.
Shelden, E. *See* Wadsworth, Shelden, Rupp, and Rieder.
Shelly, L. L., Tynan, W., Schmid, W., Schutz, G., and Yeoh, G. C. T. Hepatocyte differentiation in vitro: initiation of tyrosine aminotransferase expression in cultured fetal rat hepatocytes. 3403.
Shen, A. C-Y. *See* Jorgensen, Shen, Arnold, Leung, and Campbell.
Shimosato, Y. *See* Shimoyama, Yoshida, Terada, Shimosato, Abe, and Hirohashi.
Shimoyama, Y., Yoshida, T., Terada, M., Shimosato, Y., Abe, O., and Hirohashi, S. Molecular cloning of a human Ca^{2+}-dependent cell–cell adhesion molecule homologous to mouse placental cadherin: its low expression in human placental tissues. 1787.
Shirinsky, V. P., Antonov, A. S., Birukov, K. G., Sobolevsky, A. B., Romanov, Y. A., Kabaeva, N. V., Antonova, G. N., and Smirnov, V. N. Mechano-chemical control of human endothelium orientation and size. 331.
Siegel, A. *See* Lenhard, Siegel, and Free.
Sillman, A. L. *See* Dubreuil, Byers, Sillman, Bar-Zvi, Goldstein, and Branton.
Silver, P., Sadler, I., and Osborne, M. A. Yeast proteins that recognize nuclear localization sequences. 983.
— *See* Sadler, Chiang, Kurihara, Rothblatt, Way, and Silver.
Simon-Assmann, P., Bouziges, F., Vigny, M., and Kedinger, M. Origin and deposition of basement membrane heparan sulfate proteoglycan in the developing intestine. 1837.
Simons, K. *See* Bacallao, Antony, Dotti, Karsenti, Stelzer, and Simons.
— *See* Bomsel, Prydz, Parton, Gruenberg, and Simons.
— *See* Parton, Prydz, Bomsel, Simons, and Griffiths.
Sinard, J. H., and Pollard, T. D. The effect of heavy chain phosphorylation and solution conditions on the assembly of *Acanthamoeba* myosin-II. 1529.
—, **Stafford, W. F., and Pollard, T. D.** The mechanism of assembly of *Acanthamoeba* myosin-II minifilaments: minifilaments assemble by three successive dimerization steps. 1537.
Singer, I. I., Scott, S., Kawka, D. W., and Kazazis, D. M. Adhesomes: specific granules containing receptors for laminin, C3bi/fibrinogen, fibronectin, and vitronectin in human polymorphonuclear leukocytes and monocytes. 3169.
Sistonen, L., Hölttä, E., Lehväslaiho, H., Lehtola, L., and Alitalo, K. Activation of the *neu* tyrosine kinase induces the *fos/jun* transcription factor complex, the glucose transporter, and ornithine decarboxylase. 1911.
Sklar, L. A. *See* Norgauer, Just, Aktories, and Sklar.
Skudlarek, M. D. *See* Tulsiani, Skudlarek, and Orgebin-Crist.
Sloboda, R. D. *See* Gilbert and Sloboda.
Smirnov, V. N. *See* Shirinsky, Antonov, Birukov, Sobolevsky, Romanov, Kabaeva, Antonova, and Smirnov.

Smith, L. *See* Knudsen, Smith, and McElwee.
Smith, S. *See* Capetanaki, Smith, and Heath.
Snell, W. J., Eskue, W. A., and Buchanan, M. J. Regulated secretion of a serine protease that activates an extracellular matrix-degrading metalloprotease during fertilization in *Chlamydomonas*. 1689.
Sobolevsky, A. B. *See* Shirinsky, Antonov, Birukov, Sobolevsky, Romanov, Kabaeva, Antonova, and Smirnov.
Soll, D. R. *See* Wessels, Schroeder, Voss, Hall, Condeelis, and Soll.
Solomon, F. *See* Birgbauer and Solomon.
— *See* Goslin, Birgbauer, Banker, and Solomon.
Solomon, L. R. *See* Minoo, Sullivan, Solomon, Martin, Toft, and Scott.
Solowska, J., Guan, J.-L., Marcantonio, E. E., Trevithick, J. E, Buck, C. A., and Hynes, R. O. Correction. 1887.
—, **Guan, J.-L., Marcantonio, E. E., Trevithick, J. E., Buck, C. A., and Hynes, R. O.** Expression of normal and mutant avian integrin subunits in rodent cells. 853.
Sonderegger, P. *See* Ruegg, Stoeckli, Lanz, Streit, and Sonderegger.
Sordat, B. *See* Cajot, Schleuning, Medcalf, Bamat, Testuz, Liebermann, and Sordat.
Southwick, F. S., Dabiri, G. A., Paschetto, M., and Zigmond, S. H. Polymorphonuclear leukocyte adherence induces actin polymerization by a transduction pathway which differs from that used by chemoattractants. 1561.
Spangler, M. M. *See* Matzuk, Spangler, Camel, Suganuma, and Boime.
Spencer, C. S. *See* Schwarzbauer, Spencer, and Wilson.
Spencer, D. F. *See* LeBlanc, Földvári, Spencer, Breckenridge, Fenwick, Williams, and Mezei.
Spiess, E. *See* Pesheva, Spiess, and Schachner.
Spray, D. C. *See* Pepper, Spray, Chanson, Montesano, Orci, and Meda.
Spudich, J. A. *See* Pasternak, Flicker, Ravid, and Spudich.
Spycher, M. A. *See* Bruckner, Hörler, Mendler, Houze, Winterhalter, Eich-Bender, and Spycher.
Srimal, S. *See* Nathan, Srimal, Farber, Sanchez, Kabbash, Asch, Gailit, and Wright.
Srivastva, A. *See* White, Allis, Goldfarb, Srivastva, Weir, and Gorovsky.
Staecker, J. L. *See* Winningham-Major, Staecker, Barger, Coats, and Van Eldik.
Stafford, W. F. *See* Sinard, Stafford, and Pollard.
Stanley, K. *See* Andres, Stanley, Cheifetz, and Massagué.
Stanley, P. *See* Chaney, Sundaram, Friedman, and Stanley.
Steer, C. J. *See* Heuser and Steer.
Steinert, P. M. *See* Yuspa, Kilkenny, Steinert, and Roop.
Stelzer, E. H. K. *See* Bacallao, Antony, Dotti, Karsenti, Stelzer, and Simons.
— *See* Rosa, Weiss, Pepperkok, Ansorge, Niehrs, Stelzer, and Huttner.
Stemple, D. L. *See* Olmsted, Stemple, Saxton, Neighbors, and McIntosh.
Stendahl, O. *See* Särndahl, Lindroth, Bengtsson, Fällman, Gustavsson, Stendahl, and Andersson.
Stephens, R. E. *See* Tilney, Tilney, Stephens, Merte, Drenckhahn, Cotanche, and Bretscher.
Stepp, M. A. *See* Hynes, Marcantonio, Stepp, Urry, and Yee.
Stevens, T. H. *See* Rothman, Yamashiro, Raymond, Kane, and Stevens.
Stevenson, B. R. *See* Anderson, Van Itallie, Peterson, Stevenson, Carew, and Mooseker.
Stewart, M., Quinlan, R. A., and Moir, R. D. Molecular interactions in paracrystals of a fragment corresponding to the α-helical coiled-coil rod portion of glial fibrillary acidic protein: evidence for an antiparallel packing of molecules and polymorphism related to intermediate filament structures. 225.
— *See* Noegel, Rapp, Lottspeich, Schleicher, and Stewart.
Stieger, B. *See* Marxer, Stieger, Quaroni, Kashgarian, and Hauri.
St. John, P. L. *See* Abrahamson, Irwin, St. John, Perry, Accavitti, Heck, and Couchman.
Stoeckli, E. T. *See* Ruegg, Stoeckli, Lanz, Streit, and Sonderegger.
Stöß, H. *See* Swoboda, Holmdahl, Stöß, and von der Mark.
Streit, P. *See* Ruegg, Stoeckli, Lanz, Streit, and Sonderegger.
Stroobant, P. *See* Ridley, Davis, Stroobant, and Land.
Stroud, R. M. *See* Mitra, McCarthy, and Stroud.
— *See* Mitra, McCarthy, and Stroud.
Struve, A. *See* Isaacs, Kim, Struve, and Fulton.
Stuekenbrok, H. *See* Kartenbeck, Stuekenbrok, and Helenius.
Suganuma, N. *See* Matzuk, Spangler, Camel, Suganuma, and Boime.
Sugrue, S. P., Gordon, M. K., Seyer, J., Dublet, B., van der Rest, M., and Olsen, B. R. Immunoidentification of type XII collagen in embryonic tissues. 939.
—, **Gordon, M. K., Seyer, J., Dublet, B., van der Rest, M., and Olsen, B. R.** Correction. 2555.
— *See* Tranter, Sugrue, and Schwartz.
Sullivan, W. *See* Minoo, Sullivan, Solomon, Martin, Toft, and Scott.
Sumper, M. *See* Ertl, Mengele, Wenzl, Engel, and Sumper.
Sundaram, S. *See* Chaney, Sundaram, Friedman, and Stanley.
Suzuki, C. K. *See* Bonifacino, Suzuki, Lippincott-Schwartz, Weissman, and Klausner.
Swanson, M. S. *See* Piñol-Roma, Swanson, Gall, and Dreyfuss.
Swoboda, B., Holmdahl, R., Stöß, H., and von der Mark, K. Cellular heterogeneity in cultured human chondrocytes identified by antibodies specific for α2(XI) collagen chains. 1363.
Sylvester, S. R. *See* Disney, Johnson, Magnuson, Sylvester, and Reeves.

T

Takada, Y., and Hemler, M. E. The primary structure of the VLA-2/collagen receptor α^2 subunit (platelet GPIa): homology to other integrins and the presence of a possible collagen-binding domain. 397.
Takemura, R. *See* Kanai, Takemura, Oshima, Mori, Ihara, Yanagisawa, Masaki, and Hirokawa.
Tammimen, M. *See* Sandberg, Tammimen, Hirvonen, Vuorio, and Pihlajaniemi.
Tan, E. M. *See* Olins, Olins, Cacheiro, and Tan.
Tarpey, J. *See* Fisher, Cui, Zhang, Hartman, Grahl, Guo-Yang, Tarpey, and Damsky.
Tartakoff, A. M. *See* Turner and Tartakoff.
Taylor, K. A., Reedy, M. C., Córdova, L., and Reedy, M. K. Three-dimensional image reconstruction of insect flight muscle. I. The rigor myac layer. 1085.
—, **Reedy, M. C., Córdova, L., and Reedy, M. K.** Three-dimensional image reconstruction of insect flight muscle. II. The rigor actin layer. 1103.
Terada, M. *See* Shimoyama, Yoshida, Terada, Shimosato, Abe, and Hirohashi.
Terasaki, M. *See* Henson, Begg, Beaulieu, Fishkind, Bonder, Terasaki, Lebeche, and Kaminer.
Tertoolen, L. G. J. *See* Defize, Boonstra, Meisenhelder, Kruijer, Tertoolen, Tilly, Hunter, van Bergen en Henegouwen, Moolenaaar, and de Laat.
Testuz, J. *See* Cajot, Schleuning, Medcalf, Bamat, Testuz, Liebermann, and Sordat.
Therrien, S., and Naccache, P. H. Guanine nucleotide–induced polymerization of actin in electopermeabilized human neurtophils. 1125.
Thiery, J. P. *See* Boyer, Tucker, Vallés, Franke, and Thiery.
Thomas, J. O. *See* Li and Thomas.
Tilly, B. C. *See* Defize, Boonstra, Meisenhelder, Kruijer, Tertoolen, Tilly, Hunter, van Bergen en Henegouwen, Moolenaaar, and de Laat.
Tilney, L. G., and Portnoy, D. A. Actin filaments and the growth, movements, and spread of the intracellular bacterial parasite, *Listeria monocytogenes*. 1597.
— *See* DeRosier and Tilney.
— *See* Tilney, Tilney, Stephens, Merte, Drenckhahn, Cotanche, and Bretscher.
Tilney, M. S., Tilney, L. G., Stephens, R. E., Merte, C., Drenckhahn, D., Cotanche, D. A., and Bretscher, A. Preliminary biochemical characterization of the stereocilia and cuticular plate of hair cells of the chick cochlea. 1711.
Toft, D. O. *See* Minoo, Sullivan, Solomon, Martin, Toft, and Scott.
Tolley, J. O. *See* Jesaitis, Tolley, Bokoch, and Allen.
Tombes, R. M., and Borisy, G. G. Intracellular free calcium and mitosis in mammalian cells: anaphase onset in calcium modulated, but is not triggered by a brief transient. 627.
Tomlinson, S. *See* Nadin, Rogers, Tomlinson, and Edwardson.

Tooze, J., Kern, H. F., Fuller, S. D., and Howell, K. E. Condensation–sorting events in the rough endoplasmic reticulum of exocrine pancreatic cells. 35.
Tosetti, F. *See* Pfeffer, Ferrari, Tosetti, and Vidali.
— *See* Pfeffer, Ferrari, Tosetti, and Vidali.
Totty, N. *See* Davies, Warwick, Totty, Philp, Helfrich, and Horton.
Tournier, F. *See* Komesli, Tournier, Paintrand, Margolis, Job, and Bornens.
Trahair, J. F., Neutra, M. R., and Gordon, J. I. Use of transgenic mice to study the routing of secretory proteins in intestinal epithelial cells: analysis of human growth hormone compartmentalization as a function of cell type and differentiation. 3231.
Tranter, M. P., Sugrue, S. P., and Schwartz, M. A. Evidence for a direct, nucleotide-sensitive interaction between actin and liver cell membranes. 2833.
Trapp, B. D., Andrews, S. B., Cootauco, C., and Quarles, R. The myelin-associated glycoprotein is enriched in multivesicular bodies and periaxonal membranes of actively myelinating oligodendrocytes. 2417.
Tremble, P. M. *See* Werb, Tremble, Behrendtsen, Crowley, and Damsky.
Trevithick, J. E. *See* Solowska, Guan, Marcantonio, Trevithick, Buck, and Hynes.
Trevithick, *See* Solowska, Guan, Marcantonio, Trevithick, Buck, and Hynes.
Trybus, K. M. Filamentous smooth muscle myosin is regulated by phosphorylation. 2887.
—, **and Henry, L.** Monoclonal antibodies detect and stabilize conformational states of smooth muscle myosin. 2879.
Tsukita, S., Itoh, M., and Tsukita, S. A new 400-kD protein from isolated adherens junctions: its localization at the undercoat of adherens junctions and at microfilament bundles such as stress fibers and circumferential bundles. 2905.
— *See* Hieda, Tsukita, and Tsukita.
— *See* Hieda, Tsukita, and Tsukita.
T.-T. Sun *See* O'Guin, Manabe, and T.-T. Sun.
Tucker, G. C. *See* Boyer, Tucker, Vallés, Franke, and Thiery.
Tulsiani, D. R. P., Skudlarek, M. D., and Orgebin-Crist, M.-C. Novel α-D-mannosidase of rat sperm plasma membranes: characterization and potential role in sperm–egg interactions. 1257.
Turner, J. R., and Tartakoff, A. M. The response of the Golgi complex to microtubule alterations: the roles of metabolic energy and membrane traffic in Golgi complex organization. 2081.
Tynan, W. *See* Shelly, Tynan, Schmid, Schutz, and Yeoh.

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Uehara, Y. *See* Kondo, Watanabe, Sasaki, Uehara, and Oishi.
Urry, L. A. *See* Hynes, Marcantonio, Stepp, Urry, and Yee.

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Valberg, P. A. *See* Zaner and Valberg.
Valgeirsdottir, K. *See* Saide, Chin-Bow, Hogan-Sheldon, Busquets-Turner, Vigoreaux, Valgeirsdottir, and Pardue.
Vallés, A. M. *See* Boyer, Tucker, Vallés, Franke, and Thiery.
Van De Water, L. *See* ffrench-Constant, Van De Water L., Dvorak, and Hynes.
van der Rest, M. *See* Sugrue, Gordon, Seyer, Dublet, van der Rest, and Olsen.
van Bergen en Henegouwen, P. M. P. *See* Defize, Boonstra, Meisenhelder, Kruijer, Tertoolen, Tilly, Hunter, van Bergen en Henegouwen, Moolenaaar, and de Laat.
Vandekerckhove, J. S., Kaiser, D. A., and Pollard, T. D. *Acanthamoeba* actin and profilin can be cross-linked between glumatic acid 364 of actin and lysine 115 of profilin. 619.
Vandekerkhove, J. *See* Garcia, Coudrier, Carboni, Anderson, Vandekerkhove, Mooseker, Louvard, and Arpin.
Van Den Berghe, H. *See* Heremans, Van Der Schueren, De Cock, Paulsson, Cassiman, Van Den Berghe, and David.
van den Ende, H. *See* Kooijman, de Wildt, Beumer, van der Vliet, Homan, Kalshoven, Musgrave, and van den Ende.
van der Rest, M. *See* Sugrue, Gordon, Seyer, Dublet, vanderRest, and Olsen.
Van Der Schueren, B. *See* Heremans, Van Der Schueren, De Cock, Paulsson, Cassiman, Van Den Berghe, and David.
van der Vliet, G. *See* Kooijman, de Wildt, Beumer, van der Vliet, Homan, Kalshoven, Musgrave, and van den Ende.
Van Eldik, L. J. *See* Winningham-Major, Staecker, Barger, Coats, and Van Eldik.
Van Itallie, C. M. *See* Anderson, Van Itallie, Peterson, Stevenson, Carew, and Mooseker.
Van Kampen, M. *See* Capps, Van Kampen, Ward, and Zúñiga.
Varon, S. *See* Muir, Engvall, Varon, and Manthorpe.
Vasilevskaya, T. D. *See* Glukhova, Frid, Shekhonin, Vasilevskaya, Grunwald, Saginati, and Koteliansky.
Vassalli, J.-D. *See* Sappino, Huarte, Belin, and Vassalli.
Vaughan, D. K., Fisher, S. K., Bernstein, S. A., Hale, I. L., Linberg, K. A., and Matsumoto, B. Evidence that microtubules do not mdeiate opsin vesicle transport in photoreceptors. 3053.
Velasco, *See* Vertel, Velasco, LaFrance, Walters, and Kaczman-Daniel.
Velleca, M. A. *See* Williams, Velleca, Curry, and Rosenbaum.
Vernon, R. B. *See* Sage, Vernon, Funk, Everitt, and Angello.
Verrall, S., and Seeds, N. W. Characterization of ^{125}I-tissue plasminogen activator binding to cerebellar granule neurons. 265.
Vertel, B. M., Velasco, A., LaFrance, S., Walters, L., and Kaczman-Daniel, K. Precursors of chondroitin sulfate proteoglycan are segregated within a subcompartment of the chondrocyte endoplasmic reticulum. 1827.
Vestweber, D. *See* Hwang, Jascur, Vestweber, Pon, and Schatz.
— *See* Pon, Moll, Vestweber, Marshallsay, and Schatz.
Vibert, P., and Castellani, L. Substructure and accessory proteins in scallop myosin filaments. 539.
Vidali, G. *See* Pfeffer, Ferrari, Tosetti, and Vidali.
— *See* Pfeffer, Ferrari, Tosetti, and Vidali.
Vigny, M. *See* Simon-Assmann, Bouziges, Vigny, and Kedinger.
Vigoreaux, J. O. *See* Saide, Chin-Bow, Hogan-Sheldon, Busquets-Turner, Vigoreaux, Valgeirsdottir, and Pardue.
Vlodavsky, I. *See* Rogelj, Klagsbrun, Atzmon, Kurokawa, Haimovitz, Fuks, and Vlodavsky.
Vogel, R. *See* Noda and Vogel.
Volonté, C., Rukenstein, A., Loeb, D. M., and Greene, L. A. Differential inhibition of nerve growth factor responses by purine analogues: correlation with inhibition of a nerve growth factor–activated protein kinase. 2395.
von der Mark, K. *See* Goodman, Risse, and von der Mark.
von der Mark, K. *See* Swoboda, Holmdahl, Stöß, and von der Mark.
Voss, E. *See* Wessels, Schroeder, Voss, Hall, Condeelis, and Soll.
Vuorio, E. *See* Sandberg, Tammimen, Hirvonen, Vuorio, and Pihlajaniemi.

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Wachtfogel, Y. T. *See* Gustafson, Lukasiewicz, Wachtfogel, Norton, Schmaier, Niewiarowski, and Colman.
Wada, I. *See* Lai, Cameron, Wada, Doherty, Kay, Posner, and Bergeron.
Wade, W. F., Freed, J. H., and Edidin, M. Translational diffusion of class II major histocompatibility complex molecules is constrained by their cytoplasmic domains. 3325.
Wadsworth, P., Shelden, E., Rupp, G., and Rieder, C. L. Biotin-tubulin incorporates into the kinetochore fiber microtubules during early but not late anaphase. 2257.
Waizenegger, I. *See* Krohne, Waizenegger, and Höger.
Walsh, F. S. *See* Doherty, Barton, Dickson, Seaton, Rowett, Moore, Gower, and Walsh.
— *See* Pizzey, Rowett, Barton, Dickson, and Walsh.
Walter, P. *See* Hann, Poritz, and Walter.
— *See* Krieg, Johnson, and Walter.
— *See* Wolin and Walter.
Walters, L. *See* Vertel, Velasco, LaFrance, Walters, and Kaczman-Daniel.
Wang, Y.-L. *See* McKenna, Wang, and Konkel.

Ward, C. L. *See* Capps, Van Kampen, Ward, and Zúñiga.
Warder, E. *See* McNeil, Muthukrishnan, Warder, and D'Amore.
Warren, G. *See* Chappell and Warren.
— *See* Lucocq, Berger, and Warren.
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1963 **A human centromere antigen (CENP-B) interacts with a short specific sequence in alphoid DNA, a human centromeric satellite.** H. Masumoto, H. Masukata, Y. Muro, N. Nozaki, and T. Okazaki

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3214 **Correction**

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3493 **The extracellular matrix of *Volvox carteri*: molecular structure of the cellular compartment.** H. Ertl, R. Mengele, S. Wenzl, J. Engel, and M. Sumper